Sustainability and Outreach: Analysis of Microfinance Banks in Nigeria

Toyin Segun OGUNLEYE

Submitted for the Degree of Doctor of Philosophy

School of Social Sciences and Humanities

University of Bradford

2015

Abstract

Toyin Segun Ogunleye

Sustainability and Outreach: Analysis of Microfinance Banks in Nigeria

Keywords: Mission Drift, Interest Rate, Loans, Repayment, Women, Outreach, Scaling up.

The thesis empirically examined the implications of microfinance scaling up or sustainability on outreach in Nigeria. Basically, two methodologies were used namely, panel data econometric and survey methods. The panel dataset of 752 microfinance banks in Nigeria was used during the period 2011-2014, while the survey was conducted on some selected microfinance banks in Federal Capital Territory, Abuja in 2014. The findings from the thesis showed that, at the national level, yield, labour cost, orientation, efficiency, gender and size of loans are the major drivers of microfinance banks' sustainability in Nigeria. While at the state level, microfinance banks sustainability is driven by orientation and loan size. Findings also showed that sustainable MFBs tend to be more focused on the poor clients. The thesis showed that lending to female clients improves repayment rate of MFBs in Nigeria. Corroborating the regression result, the survey findings also suggest that lending to women had improved and enhanced repayment rate.

In view of these findings, the thesis recommends that sustainability and outreach are not necessarily incompatible. However in pursuing sustainability greater attention should be on female clients, as greater lending to women would improve the repayment rate of MFBs and further engendered the industry sustainability.

Acknowledgement

First and foremost my deepest thanks go to Almighty God through His Son Jesus Christ, who is owner of my life and the power behind my success.

I own my sincere gratitude to my supervisors, Professor, **John Weiss** and Dr **Hossein Jalilian** for their helpful comments and valuable suggestions. I would not have successfully completed this work without their supports and guidance.

My thanks also go to my employer, Central Bank of Nigeria, for giving me this invaluable opportunity to pursue my PhD programme at the University of Bradford, United Kingdom. Indeed, it was an opportunity of a lifetime, the impact of which will last throughout my professional life and will be of immense benefit to the Central Bank of Nigeria and to the nation as a whole.

Finally, I am grateful to my beloved and understanding wife, Feyisayo Olubunmi Ogunleye and my kids Olusegun Oluwaseyi, Olusegun Oluwafemi, Olusegun Williams and Olusegun Victor for their love, support and patience throughout my studies.

Table of Contents

List of Figures

List of Tables

Chapter 1

Introduction

1.1 Background

Globally, poverty is a stark reality and remains a global challenge especially in many developing countries. Poverty gained global attention in the year 2000, when the United Nation Millennium Declaration culminated to signing of Millennium Development Goals (MDGs), a programme that seeks to halve the extreme poverty by the year 2015 (United Nation, 2014). Despite the declaration for over a decade, the menace of poverty and how to mitigate it still remains a major intimidating challenge.

In Africa, poverty rate is alarming. The results of lived poverty survey on 16 countries in Africa, Nigeria inclusive, indicated that 53 per cent of Africans face medical services shortages, 50 per cent face food shortages, 49 per cent are in shortages of clean water and four-in-ten go without cooking fuel (Dulani et al. 2013). For example, Nigeria was recently declared the biggest economy in Africa with the growth rate of 5.1, 6.7 and 7.9 per cent in 2011, 2012 and 2013, respectively. Despite the robust growth, the country still faces mounting challenges of high incidence of poverty such that poverty rate was estimated at 84.5 per cent by the World Bank.

Moreover, National Bureau of Statistics (NBS) (2010) statistics showed that the absolute poverty in Nigeria defined in terms of minimal requirements necessary to afford minimal standards of food, clothing, healthcare and shelter was 54.7 per cent in 2004 and later rose to 60.9 per cent in 2010,

showing increase in the poverty level. Also, about 112 million people live on less than US$1 a day in Nigeria (NBS, 2010). The survey on total number of people excluded from formal financial institutions in Nigeria by Enhancing Financial Innovation & Access (EFlnA) report showed that about 64.1 per cent of adult population has never been banked, 3.4 per cent were previously banked while only 32.5 per cent of adult population are banked (EFInA, 2012). This factor, amongst others, contributed to increasing poverty level in Nigeria. Access to financial services provides opportunities for the poor to unlock their productive capacities; it opens up new possibilities for poverty reduction and is capable of instituting social change on a sustainable basis (Armendariz and Morduch, 2010).

In developing countries lending to the poor by formal financial institutions is constrained by the twin problems of adverse selection and moral hazard (Armendariz and Morduch, 2010). The shifting conditions poor countries make it difficult for the lending institutions to identify riskier borrowers; they therefore raise average interest rate to compensate probability of default arising from lending to riskier clients (Stiglitz and Weiss, 1981). The second challenge arises from failure of lending institutions to monitor the proper use of investment capital by their customers, leading to moral hazard of clients absconding with the bank's money. These problems are further escalated where there is a weak legal system which does not encourage contract enforcement and by the high transaction costs usually associated with small loans (Armendariz and Morduch, 2010).

The revolution of microfinance started with the Grameen Bank's lending of small loan without collateral to the excluded poor people that had been

termed unprofitable by the formal financial institutions (Dehejia et al. 2012). Today through its innovative lending, microfinance has reduced the problems of information asymmetry and transaction costs associated with lending to the poor in developing countries and many feel it has proved to be a potent weapon to break the vicious circle of poverty (Cull et al. 2007). Microfinance institution, which forms the industry that focuses on the poor who are excluded from formal financial institution, is considered as a possible solution to poverty in many developing countries. As a result, microfinance came to limelight and became a global issue (Ditcher and Harper, 2007; Mersland and Strom, 2010). The industry has expanded its services to the poor by engaging in diverse forms of financial services to the poor such as saving mobilization, remittances services, insurance, credit, legal aid, micro pension, business management, group formation, book keeping training, nutrition training and education services (Corsi et al. 2006). The wisdom behind these expanded services of microfinance is to ultimately unlocked productive capacity of the poor, strengthening their skills, build business capacity of the poor and thereby reduce poverty. These micro services could be further explored to surmount poverty, especially in Africa, by empowering vast majority of the poor population through more expanded access to micro loans and credits, especially, to rural women who constitute majority of the poor borrowers.

Recognising the possibility of microfinance services in combating poverty, policy makers, donors and academics are recently calling for scaling up of microfinance industry in order to improve scale of outreach (Paul and Conroy, 2000; Morduch, 2000; Hermes and Lensink, 2007; Thapa, 2007).

Scaling up ensures microfinance institutions reach wide range of poor clients on sustainable basis, since then, scaling up becomes centre thoughts in both policy and academic world (Paul and Conroy, 2000). The scaling up phenomenon is termed 'microfinance sustainability', it is defines as ability to sustain 'on-going concern' of microfinance institutions without recourse to subsidies, it also means viability of a microfinance programme without recourse to either domestic or foreign donors' assistance (Tuker and Miles, 2014; Pollinger et al. 2007). The concern for financial viability became prominent and eventually gains global attention in 1992 when Banco Sol, from Bolivia was commercialised and was listed in the capital market (Mersland and Strom, 2010). Micro Banking Bulletin (2007) shows that about 41% MFIs are financially self-sustainable out of the dataset of 704 MFIs. Financial sustainability of microfinance is characterised with three main features namely competition, profitability and regulation (CGAP, 2001). For example, in most developing countries, commercialized microfinance banks (MFBs) are more profitable than non-commercialized ones; there is also competition among MFBs for financial liberalization, growing entrance of commercial banks to the industry and focus of government regulatory policy on the industry (Mersland and Strom, 2010).

The call for microfinance sustainability emanates from institutionalists that believe that financial sustainable microfinance institutions would increase depth of outreach (Robinson, 2001; Drake and Rhyne, 2002). Their argument is spurred by the belief that a sustainable institution would enjoy economic of scale, gain access to private capital and better-off borrowers through giving of larger loans (Gibbons and Meehan, 1999). They advocate

the use high interest rate that could cover and above operating costs of microfinance institutions and that would sustain microfinance institutions (MFIs) in business (Robinson, 2001; CGAP, 2004).

However, the welfarists advocate the opposing views by favouring the use of credit subsidization and low interest rate thereby increase the breath of outreach and improve the welfare of the clients (Woller et al. 1999; Woller 2002; Hermes et al. 2011). Based on welfarists' proposition, many developing countries in the early 1970s and late 1980s adopted interest rate cap or loans subsidization with particular emphasis on directive lending to the preferred sectors of the economy (Dehejia et al. 2012). Nevertheless, subsidized lending was not without challenges as greater parts of the loans go to wrong hands as a result of political interferences (Dehejia et al. 2012). In view of the weaknesses of subsidized lending, the institutionalists' argue that credit subsidization, instead of facilitating poverty reduction, could promote inefficiency and misallocation of resources and eventually aggravate poverty; they therefore advocate profit maximisation by raising interest rate (Morduch, 1999). Indeed, previous efforts by the Nigerian government to promote lending to the poor through interest rate caps and subsidized credit most often result to other challenges such as resources diversion and allocating loans to political favoured members of the societies (Ehigiamusoe, 2011). The views of institutionalists are counter-opposed by the welfarists, they argue that high interest rate induced by profit maximisation would crowd out the poor, promote moral hazard, leading to adverse selection and eventually leading to low repayment rate (Morduch, 1999).

In view of the opposing opinions of institutionalists and welfarists, the possible role of interest rate in microfinance industry, the effects of interest rate on outreach and repayment became an issue in microfinance debate (CGAP, 2004). Microfinance institutions primary rely on interest rate charges to cover their costs on microloans. These costs include cost of money lending to clients, cost of loan defaults and transaction costs (CGAP, 2004; Nwachukwu, 2014; Zhang, 2014). Therefore, microfinance charge high interest rates to remain in business, their charge rates are relatively higher than formal banking rates because of high transaction costs (Morduch, 1999; Campion et al., 2010; Susannah, 2012; Dehejia et al., 2012; Kar and Swain, 2014). This is sometimes justified by the argument that microfinance clients are more concerned about access to microloans than high interest rate (CGAP, 2004; Armendariz and Morduch, 2010). This assertion is confirmed by the high patronage enjoyed by the village money lenders despite that their charges are far above what average microfinance institutions charge as interest rate (CGAP, 2004). As assertive as reasons for high interest rate seem to be, others are of the view that high interest rate could indeed crowd out the poor clients who are the sole target of microfinance and exacerbate moral hazard, adverse selection and low repayment (Dehejia et al., 2012).

More also, these contending issues have sparked other debate as to whether the drive for microfinance sustainability could lead to mission drift (Mersland and Strom, 2010). Microfinance institutions primary focus on the poor with the purpose to eliminate poverty but recent focus on sustainability through profit maximization and charging of high interest rate could drift the

industry away from its initial mission. This phenomenon is termed ‘mission drift’. Some of the critics that hold this view argue that it could lead MFBs losing sight of its original social objective of poverty reduction (Mersland and Strom, 2010; Ditcher and Harper, 2007). Prominent among these critics is the Nobel Peace Prize winner, Mohammad Yunus, who claimed that too much focus on profit could crowd out poorer clients of MFIs (Christen and Drake, 2002). This claim of crowding out of the poor or mission drift was based on the argument that higher profits lead to lower outreach (Mersland and Strom, 2010). However, the assertion of mission drift has been challenged by the proponents of commercialisation of microfinance, they argue that instead of mission drift, sustainability would rather reduce, operating costs, meet the magnitude of the enormous demand for microfinance services and thereby lead to increase in the depth of outreach (Gonzallenz-Vega et al. 1996; Kar 2013).

Mission drift occurs when the composition of new existing microfinance clients shifted from the poorer to wealthier ones (Cull et al. 2007). Copestake (2007) defines mission drift as action taken by microfinance institutions that bring about shift in focus on poverty reduction. The concern for mission drift emanated from the socially driven and poverty focused microfinance institutions that argue that sustainability could lead to shift in the composition of new clients to the wealthier ones (Cull, et al. 2007). Mission drift implies shifting focus from the original promise of lending more to the rural poor, especially women, which is original social commitment of microfinance. *So*me of the reasons adduced to justify the process of scaling-up which might invariably lead to mission drift include,

targeting wealthier clients would minimise costs, avoid loan arrears and attracting profit-oriented donors to get more resources

However, the contending issue is that, too much focus on financial sustainability at the expense of outreach could have serious implications on microfinance impact on the poor. The views of the two contending school of thoughts also differ on this issue while welfarists affirm the thought, the institutionalists oppose it. More also, recent empirical findings on the issue of trade-off differ. For example, CGAP (2001), Cull et al. (2007), Hishigsuren (2007), Serrano-Cinca and Gutierrez-Nieto (2014) and Abrar and Javaid (2014) proved the existence of mission drift in their findings. Others such as Christen (2000), Frank (2008) and Mersland and Strom (2010) refuted such claims. The phenomenon of MFIs mission drift is germane and very crucial because of the divergence of views on the issue, more also; it is yet to be empirically tested in Nigeria. Also, mission drift has severe policy implications for the industry, regulatory bodies and the poor community who provide justification for the existence of microfinance services.

In addition to these debates, of recent some studies have shown and painted the success story of microfinance high repayment rate, despite commercialization because of its focus on women clients (Sharma and Zeller, 1997; Godquin, 2004; D'epallier et al. 2011 & 2013). The vast majority of microfinance poor clients have good repayment record and this success has been celebrated over the years (Cheston and Kuhn, 2002). The success story of microfinance is often ascribed to its focus on women because women are generally seen to be more conservative in investments, good credit risk and possess lower moral hazard than their male counterpart

(D'espallier et al. 2011). These virtues of women motivate many multilateral and bilateral development aid agencies and microfinance advocacy networks and sponsors to encourage lending to women (D'espallier et al. 2011). For example, Daley-Harris (2006) showed that beneficiaries of microfinance services increased from 13.5 million to 113.3 million between 1997 and 2005, of these beneficiaries, women constituted about 84 per cent. Also, World Bank survey in 1996 on world microfinance indicated that 61 per cent of the beneficiaries were women. In addition, lending to women constituted about 95 and 72 percent for notable microfinance institutions such as Grameen Bank and BancoSol in Bangladesh, respectively (World Bank, 1997; Yunus, 2003).

Indeed past studies conducted on microfinance programmes and projects across the globe confirm the success story of microfinance institutions in term of high repayment, especially female clients' repayment records. For example in the early 1990s, Hulme (1991) shows that 92 per cent female clients pay on time compared with male counterpart of 83 per cent while Gibbon and Kasim (1991) indicate that 95 per cent of women in Malaysia pay back their loan, but the repayment of male clients was about 72 per cent. Other studies such as Armendariz and Morduch (2005), Hossain (1998), Sharma and Zeller (1997) and Kevane and Wydick (2001) confirm similar findings, pointing to the fact that women have better repayment records than their male counterpart. However, some studies after controlling for other factors attributing the enhanced female repayment to other factors such as focus on nonfinancial services, adaptation of loan methodologies to local contexts, local economic opportunities and group lending methodology

(Godquin, 2004; Bhatt and Tang, 2002; Brehanu and Fufa, 2008). Other such as Armendariz and Morduch (2005) show that BRI in Indonesia did not focus on women and yet achieve nearly 100 per cent repayment rate for several years. These findings show diverse opinions on the issue, but there is still consensus that lending to women enhances repayment rate.

Despite the insightful nature of past studies, their findings were mainly based on survey of microfinance institutions' programmes and projects, which make their application limited to other regions of the world. Indeed, these studies lacked rigorous empirical estimation, no paper except one, provides detailed empirical estimation on gender and repayment relationship on global scale. The first rigorous and empirical estimation was conducted by D'espallier et al. (2011). They use global data set of 350 microfinance institutions in 70 countries to examine gender-repayment impact in a panel data framework. Although, the findings from the study were insightful, the findings also spur the need to empirically examine this relationship in other cases and countries especially in country such as Nigeria where the microfinance institutions confront different challenges. This thesis sets to do this.

In Nigeria, microfinance institutions face many challenges. Analysis of the four years data used for this study show that, on average, portfolio at risk of microfinance banks was 26 per cent and the loan write-off rate in the industry, on average, was 9 per cent for all microfinance banks. Also, the data further shows that over the study period of four years, women clients, on average, accounted for 45 per cent while male clients accounted for 55 per cent of the total active clients of microfinance banks in Nigeria.

Moreover, past literature showed that male clients are more associated with loans defaults (Hossain, 1998; Khandker et al., 1995; Sharma and Zeller, 1997; Hulme, 1991; Gibbons and Kasim, 1991). In view of these facts, can increased lending to female clients improve microfinance performances and repayment rate in Nigeria? These questions have not been previously and adequately answered in Nigeria due to non-availability of data. Past studies on Nigeria such as Ugwumba et al. (2008), Mkpado et al. (2010) and Julius and Aminant (2011) were conducted through survey of microfinance institutions and are limited in methodology and analysis. The study by Onyeagocha et al. (2012) that used empirical data is limited in scope because of non-availability of data and other studies did not address gender- repayment issues.

In view of the contradictory views on these aforementioned issues and concerns in the literature and more importantly that these contentious Issues have not been empirically tested in Nigeria, it becomes expedient for a study of this nature to be conducted on Nigeria. The first large cross-sectional study on these issues was conducted by Cull et al. (2007) using 124 microfinance institutions (MFIs) in 49 developing countries, but the static nature of the study limited it general application to other countries. The work of Jegede et al. (2012) attempted to deal with outreach and sustainability in Nigeria using panel data analysis but their study was limited in scope as it only covers Lagos and Ondo States in the Western Region and failed to account for drivers of sustainability, repayment and to answer mission drift and high interest rate issues. Other studies on microfinance in Nigeria such as Akanji (2002); Anyanwu (2004); Kalu (2006); Iganiga

(2008); Okpara (2010); Aigbokhan and Asemota (2011); Abiola, (2011); Awojobi and Bein, (2011) only focus on growth and poverty related issues. In view of weaknesses of the previous studies, this thesis on Nigeria, therefore, intends to fill this gap by using larger data that captures country-specific and state-specific factors driving microfinance sustainability and to answer mission drift, high interest rates, women lending and repayment questions in Nigeria.

1.2 Significance of the Research

Microfinance could serve as a tool to combat the challenge of poverty globally. The importance of microfinance is further reinforced by ever increasing demand for its services which are currently outstripped its supply. With the recent call for scaling up to meet the unmet demand in the industry, this thesis seeks to shed light on the possible factors that drive sustainability of the industry, especially in Nigeria. Moreover, past studies have also shown the possibility of microfinance institutions to be drifted away in the process of scaling up, this thesis will help to gain insight into whether the process of scaling up in Nigeria has caused microfinance banks to lose focus on the poor or not. The thesis will also answer some questions as to whether high interest rate is detrimental to high repayment rate. In addition, the thesis will also test if focusing on female clients will indeed improve microfinance repayment, this will help policy makers and microfinance institutions to reduce the challenge of low repayment in the industry. There is this concern in microfinance industry that experience of other countries cannot be replicated in another country due to state-specific factors. The

thesis will contribute to this, by comparing Nigeria-specific experience with the experience of Abuja, Federal Capital territory, in the Nigeria.

1.3 Aims and Objectives and Research Questions

The broad objectives of this thesis are to examine the drivers of microfinance sustainability and to answer questions related to impact of high interest rate on repayment in Nigeria. It also examines whether 'mission drift' is an illusion in Nigeria or not and also tests for factors that could improve repayment rate in Nigeria. In order to achieve these objectives the thesis utilized the panel dataset of 752 microfinance banks in Nigeria during 2011-2014. The goal is to shed more light and enhance our understanding of the issues that surround sustainability debate and thereby draw policy prescriptions and contribute to the existing body of knowledge. The thesis specifically:

- Review literature on microfinance sustainability, interest rate, mission drift and the role of women lending on repayment. The review intends to identify gaps in the literature and review definitional, conceptual, interest rate debate, relevant theories of microfinance and methodological issues in microfinance.
- Investigate empirically, the drivers of microfinance sustainability in Nigeria.
- Test for the presence of mission drift in Nigeria.
- Determine the effect of increasing interest rate on microfinance repayment rate.
- Test if lending to women improve repayment rate
- Identify research gaps for future research.

To put this thesis under proper perspective, the research will attempt to answer the following questions:

- What are the drivers of microfinance sustainability in Nigeria?
- What is the effect of interest rate on microfinance repayment in Nigeria?
- Does microfinance sustainability lead to mission drift in Nigeria?
- Lastly, does increase in women outreach improve repayment rate in Nigeria?

1.4 Contribution of the thesis

This thesis is a pioneering work in Nigeria, being the first thesis that uses large data of 752 microfinance banks in Nigeria, the use of these data in a panel data framework to determine sustainability and the factors that drive it, is the first of its kind in Nigeria. Specifically;

- The thesis will help to deepen interest rate policy formulation, chart the path to appropriate interest rates and regulatory agencies to design policies that encourage competitiveness among MFIs, which will reduce high costs associated with microfinance services in Nigeria which are detrimental to the poverty reduction objective of the government.
- Identifying factors that drive sustainability of microfinance will help the design of regulatory framework that ensures stability of microfinance industry, improve the depth of outreach and eventually help poverty reduction efforts of the government.

1.5 Data and Methodology

The thesis used a more detailed panel data on 752 microfinance institutions (MFIs) collected by the Central Bank of Nigeria (CBN). The data set used for this study covers 94.0 per cent of the data submitted to the CBN by about 800 microfinance banks in Nigeria. The remaining 6.0 per constitutes microfinance banks whose licenses are either been revoked, suspended or whose data are not useable. The methodology used for the thesis is unbalanced panel data analysis during 2011-2014 and survey method conducted in 2014 on some selected microfinance banks in FCT, Abuja. Some variables used for the panel data method, amongst others, included operating self-sufficiency ratio, a proxy for sustainability, interest rate proxy by yield, labour cost, and orientation proxy by loans to assets ratio. Other variables included, total assets, a proxy for history, measure of efficiency and gender, a proxy for women borrowers. Also, three measures of repayment, namely, portfolio-at-risk, write-off rate and provision expense rate are used to test the effect of female lending on repayment. The main equations are subsequently allowed to vary by lending types to test the effect of lending models on dependent variables in some cases. The choice of this methodology is predicated on the grounds that panel data analysis addresses associated problems with static cross sectional and ordinary regression analysis by partially accounting for variation in the data, within the short span of observations available here. It takes care of problems of unobserved heterogeneity commonly associated with cross sectional studies and accounts for idiosyncratic error. These problems are time-

constant factors and time-varying error that affect the dependent variable (Wooldridge, 2006).

1.6 Structure of the thesis

The thesis is structured into six chapters. Following this introduction is chapter two. It reviews studies conducted in the last twenty years on microfinance institutions. The focus is to identify gaps in the literature and examines definitional, conceptual, debates, theories and methodological issues of microfinance.

Chapter three focuses on the history, regulations and performance of microfinance institutions in Nigeria. It traces the history and characteristics of native microfinance, financial cooperatives, NGOs and government microfinance initiatives and reviews the regulatory framework of microfinance in Nigeria. The second part deals with performance of microfinance banks in Nigeria.

Chapter four focuses on data, methodology and presentation of results. The empirical framework adopted is based on one-way error component panel data regression model where error composed into the unobserved MFI-specific effect and the idiosyncratic error i.e. $\mu_i \sim IIN(0, \sigma_\mu^2)$ and independent of $v_i \sim IIN(0, \sigma_v^2)$. Using a more detailed panel data on 752 microfinance institutions (MFIs) collected by the Central Bank of Nigeria (CBN) during 2011-2014 to estimate the model using relevant variables.

Chapter five focuses on the operations and performance analysis of microfinance banks in Abuja, the Federal Capital Territory (FCT). Two methodologies are adopted in this chapter; it uses data of MFBs in the FCT,

Abuja available with the CBN to examine sustainability and outreach issues within the FCT, Abuja. One-way error component panel data regression model framework is adopted to achieve this purpose. The objective is to test whether the pattern displayed for the whole country in the previous chapters can be replicated in a single state.

Chapter six presents the summary of the main findings, contributions, policy recommendations and the limitation of the thesis.

Chapter 2

Theoretical and Empirical Literature Review

2.1 Introduction

This chapter review studies conducted in the last two decades on the drivers of microfinance sustainability, interest rate and mission drift issues and lastly the role of women outreach on repayment. The review intends to identify gaps in the literature and explains definitional, conceptual, theories and methodological issues for which analysis of microfinance will be evaluated. The first part of the section examines the definitional and conceptual issues; while the second part reviews some relevant theories of microfinance. The third part of the section reviews findings of microfinance impact analysis studies in developing countries. The last part assesses issues arising from methodologies of the impact studies.

2.2 Definitional and Conceptual Issues

This section will examine the philosophy behind microfinance and poverty reduction and also explores the definitional and conceptual issues. The world “microfinance” came to fore in 1983 when Muhammad Yunus termed it as a strategy for poverty eradication in his country Bangladesh. Yunus based his ideology of microfinance as a means to meet observed individual economic and social behaviour. He believes that poverty is not as a result of market failure in developing countries, but failure of capitalist system to capture the economic and social behaviour of individual member of the society. He argues that free market has capacity to reduce poverty if social component is incorporated into economic systems to meet observed

individual behaviour (Yunus, 2007). The link between poverty and microfinance come to fore because the poor lack access to financial services to meet both their short-term and long-run needs such as consumption needs, emergencies, income and expenses fluctuations. These needs are categorised into three groups namely, opportunities i.e. buying land and other assets, unanticipated situation such as sudden death of the love ones, loss of employment and sickness; lastly, life-cycle needs such as burial, marriage and education (Stewart et al. 2010).

Prior to 1980s, in the 1970's, the word "micro-credit" had been in existence, it is a means of providing loans to the poor to finance income earning projects (Stewart et al. 2010). In a simple term, micro-credit and micro-savings is a mechanism that allows the poor, especially, the women in the rural areas to invest their money in the future with the aim of lifting themselves from poverty (Stewart et al. 2010). This implies that microfinance provides an avenue where micro or small scale financial services are provided to the unbanked poor people who are excluded from the formal banking system. Microfinance is generally defines as institutions that provide saving, small credit and other financial services such as insurance services to economically and socially excluded poor individual with initially most borrowers rural poor women (Pillai and Nadarajan, 2010). Otero (1999) defines microfinance as provision of financial services to the poor clients who are self-employed with low income. Such financial services generally include provision of credit, savings, insurance and other financial payment services (Ledgerwood, 1999). Schreiner and Colombet (2001) describe it as medium of improving access of poor households who are

excluded from formal financial institution to small deposits and loans. These definitions imply that microfinance provides loans or credit to small enterprises, the poor and very poor self-employed households who cannot access credit from commercial banks due the conditionality attach to it.

Moreover, Robinson (2001) defines microfinance as institutions that provide credit and deposits to micro enterprises that involve in production process with the aim of making gain or profit. Microfinance institutions initially got their financial support from international donors, development institutions and NGOs often below market interest rate, and the institutions in turn, onward lend to actively poor economic agents (Hermes and Lensink, 2007). However, in the recent times, some microfinance institutions are now mobilizing resources from members' savings and place less reliance on donors' aid for sustainability reasons. MixMarket statistics indicated that average loan though varies for different countries, was estimated for about $470 in 2005. In 2010, average loan balance per borrower was $362.6, $1,049.8 and $141.8 in Africa, Latin America and South Asia, respectively. For the same period, the number of the active borrowers was 5.1 million, 15.7 million and 58.6 million, while their assets were US$6.8 billion, US$29.2 billion and US$11.4 billion for the respective regions. The importance of microfinance became a central issue, especially, in developing countries, due to general consensus in the development literature that the majority of the actively poor people are excluded from formal financial services because they lack requisite collateral and are too risky borrowers (Aigbokhan and Asemota, 2011). Therefore, the rationale for promoting microfinance in developing countries is based on the fact that

enhancing access to credit by the poor would increase income of the poor and alleviate poverty. The next section examines microfinance interest rate debate.

2.3 Microfinance Interest Rate Debate

In recent years, the on-going debate in microfinance industry has focused on growing controversy that surround interest rates, profit and mission drift (Kar and Swain, 2014). A plethora of recent evidences show that MFIs charge high interest rates on micro loans to poor borrowers (Morduch, 1999; Campion et al., 2010; Susannah, 2012; Dehejia et al., 2012; Kar and Swain, 2014; Zhang, 2014). There are concern that high interest rate of MFIs could truncate the primary objective of the institution that seeks to help the poor (CGAP 2004; Deheija et al. 2012). Zhang (2014, pp.101) noted that '*high cost of microfinance is a fundamental cause of the high interest rates*'. High interest rate arises because greater inherent risks and costs are associated with small loans to the poor (CGAP, 2004; Zhang, 2014). Such costs include administrative costs, cost of fund for on-lending and the cost of loan loss, out of these, administrative costs appear most challenging to MFIs (CGAP, 2004; Nwachukwu, 2014). For example, Susannah (2012) showed that, on average, it cost about 26 per cent for Equitas Microfinance in Indian to reach out to their potential customers. Also, Zhang (2014) alluded that though a single transaction is low in India about US$0.25 but the transaction costs of the loan balance accounted up to 25 per cent. Most of these costs come from the administrative costs of MFIs which involve cost of identifying, and selection of potential clients, cost of processing loan application and disbursement, cost of repayments and non-repayment (CGAP, 2004).

In view of the high costs associated with small loans lending, for MFIs to remain in business they charge enough interest rates on small loans that cover these costs, else, they fall back to subsidies which are uncertain and limited in supply (Nwachukwu, 2014; CGAP, 2004). For example, nominal average portfolio yield, a proxy widely used for interest rate, was about 34 per cent for sample of 426 MFIs in Asia, though, there were variations across regions with South Asia MFIs accounted for the lowest of about 23 per cent while the East Asia MFIs, the largest was about 39 per cent (Nwachukwu, 2014).

Opposing view to high interest is based on believe that demand for capital is elastic to change in interest rates and therefore, high interest rate on working capital would reduce demand for loan and would drain profit of micro-businesses and thereby leave the borrowers with little or no gain (Adams et al. 1984; Homer and Sylla, 1996). This motivated most developing countries in the 1970s and 1980s to restrict interest rate on micro loans to lower level to enable poor borrowers to have access to loans. The interest rate caps were often accompanied with directives who to benefit from the subsidized loans and for what purpose the subsidized loans (Dehejia et al., 2012). For example, in the early 1970s, interest rates on working capital were capped at 17 per cent per year in Brazil not minding the inflation rate that ranged between 20 to 40 per cent per year (Sayad, 1983). CGAP (2004) noted that about fourty countries retained some forms of interest rate ceilings in 2004, and these countries had large volumes of credit at subsidized rates to the poor and some preferred sectors. However, the subsidized credits in most these countries often resulted to heavy

annual losses that are funded from the treasury (CGAP, 2004). The subsidized credits were also characterized by low scale due to limited government budget constraint; also, the existing micro loan often went to non-poor members of the society due to undue political interferences leading to poor quality of financial services (Dehejia et al., 2012). Eventually, the poor who are the primary targets of interest rate ceiling are often missed out.

If subsidized interest rates do not necessarily protect the poor but rather hurt them and denied them access to credit, the question is what motivates the poor to afford high interest rate of MFIs? Evidences confirm that the poor are more concern with ongoing access to credit than high interest rate, which is the cost of credit (CGAP, 2004; Armendariz and Morduch, 2005; Zhang, 2014). The poor belief that since the amount of loans is small, they can completely bear a little higher interest rate (Zhang, 2014). Indeed, evidences justified that high interest rates have not excluded the poor. For example, The MIX data in 2004 showed that profit seeking MFIs reached large number of poor clients measured in term of average loan balance per borrower of less than 20 per cent of GDP per capital (CGAP, 2004). Also support to this fact, is the good repayment records of most profit seeking MFIs' clients (Sharma and Zeller, 1997; Godquin, 2004; D'epallier et al. 2011 & 2013). Other reason adduced to support high interest rate was that since poor borrowers could sustain money lender in business by paying 100% interest rate on loans, the poor would be willingly pay half of such interest rate on micro loans, this ranged between 20% and 50% (Dehejia et al., 2012).

2.4 Review of Relevant Theories of Microfinance

This section reviews relevant theories of microfinance so as to understand some theoretical underpinning microfinance institutions and operations. To this end, two relevant theories of microfinance are examined, namely, social welfare function and indifference- possibility curves approach to mission drift to shed light on mechanism by which microfinance affect the welfare of the society.

2.4.1 Social Welfare function of Microfinance

The social welfare function of Morduch (1999), shed light on how microfinance programme impact on the welfare of the society by putting into consideration the views of both welfarists and instutionalists in a social function. Social welfare function of a society (W) was represented by a stream of individual households' welfare i.e. $W = W(w_1, w_2, w_3.....w_n)$. The social welfare of the entire population was derived by the addition of individual welfare, such that $W = \sum_{i=1}^{n} \alpha_i wi$, where α_i stands for social welfare parameter for the i[th] household and i = 1, 2 ….n and w_i is the household's welfare. The model further assumed that household's welfare is divided into two components of base income Y and borrowed income y_i, such that $w_i = w(Y + y_i)$. The total loan borrowed is symbolized by L while average return per unit for borrower is represented δ_i which could be in the form of monetary return or non-monetary return and the average interest that borrower pay as interest is represented by r_i as shown in equation 2.1. He further assumed that y_i, which is the borrowed income, is a function of total

amount of loan (L), interest rate (r_i) and the difference between average return per unit (δ_i) such that $y_i = L_i(\delta_i - r_i)$. Therefore, changes in social welfare owing to changes in subsidies now become:

$$\frac{dW}{dr} = \sum_{i=1}^{n} \alpha_i \frac{dw_i}{dy_i} \frac{dr_i}{dr} \left[\frac{dL_i}{dr_i} (\delta_i - r_i) + L_i \left(\frac{d\delta_i}{dr_i} - 1 \right) \right] \text{.....(2.1)}$$

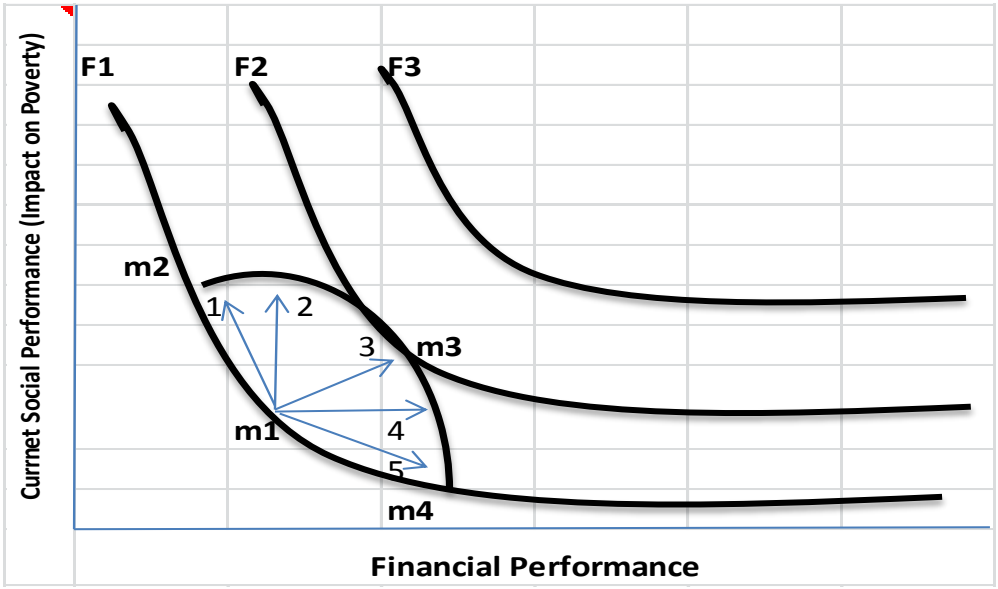
The equation 2.1 above illustrates changes in social welfare (W) resulting from changes in interest rate (r_i). Morduch (1999) concluded that the debate between welfarist and institutionalist about subsidies and sustainability stem from different views and weights attached to social welfare parameter α_i. The institutionalist that oppose subsidies tend to assume equal distribution of social weights α_i by assuming positive relationship between interest rate and returns $d\delta_i / dr_i > 0$, low responsiveness of credit demand to interest rate dL_i / dr_i, and negative externalities of subsidized credit programme. On the other hand, welfarist places greater emphasis on social weight by assuming that demand for credit is highly sensitive to interest rate, and place more premiums on consumption of the poor.

2.4.2 Indifference-possibility Curves Approach to Mission Drift

The theoretical framework for microfinance mission drift was provided by Copestake (2007) which illustrates microfinance institutions (MFIs) preferences using a set of indifference curves of F1, F2 and F3 as in the figure 2.1 below: The vertical axis of the graph represents social performance of MFIs (SP) and horizontal axis denotes the financial

performance of MFIs (FP). The negative relationship between SP and FP implies that the more MFIs focus on social objectives, the less is able to achieve its financial objective of making profit, the reverse holds when it focus more on financial performance.

Figure 2.1: Strategic Options Facing MFI



Source: Adapted from Copestake (2007)

The Copestake (2007) as illustrated in graph above assumes a trade-off between social and financial performance of microfinance institutions. The indifference curves F1, F2 and F3 represent different levels of combinations of financial and social performances whereby MFIs' utilities are the same, and movement to higher indifference curve implies higher level of overall performance of MFIs. Point m1 represents current performance of MFIs whereby it operates below the optimum level. The line m2-m4 is the possibilities curve whereby MFIs can transform to higher level of indifference curve (F2) or higher level of performance through innovations, operational reforms, investment reforms and policy change. The vertical

arrow (2), below the possibility curve (m2-m4), represents strategy, whereby, social objective of MFIs would not worsen financial performance, while the horizontal arrow (4) represents MFIs' strategy whereby improving financial performance would not worsen social performance. The arrow pointing to m3, where possibility curve intersects with indifference curve (F2), represents the optimum strategy of MFIs. While the arrow pointing to m2 shows a trade-off, whereby, MFIs give more attention to social objectives at the expense of financial performance. However, the arrow pointing to m4 represents a trade-off strategy of MFIs that gives more preference to financial performance at the expense of social performance.

Copestake (2007) noted that these strategic options available to MFIs in their decision making process, illustrate the possibility of MFIs' mission drift. An MFI that adopt policies that intentionally aimed at improving its current performance from (m1) to optimum level at point (m3), but if it eventually ends up at point m4 where more attention is given to financial performance at expense of social performance, Copestake (2007) termed such phenomenon as mission failure. If at this new point m4, an MFI fails to adopt deliberate policies to return to its original target m3, he called such phenomenon MFIs "mission drift". Mission drift occurs when there is a shift in the composition of MFIs' from the poor clients to the wealthier ones (Cull, et al. 2007).This illustrate the concern expressed in Yunus' proposition that the demand for higher profit (financial performance) by MFIs might crowd out poor clients which is the original target of microfinance (Christen and Drake, 2002).

2.5 Empirical Literature Review

This subsection in chapter 2 reviews relevant empirical literature on the issues this thesis tries to addressed. These issues include literature on drivers of sustainability, interest rate, mission drift and women outreach and repayment rate of microfinance institutions mostly in developing countries.

2.5.1 Empirical Literature on Drivers of Sustainability: A Review

The recent empirical literature tries to shed light on microfinance sustainability; the microfinance sustainability came to limelight because of paradox between sustainability and poverty reduction objective of microfinance. Sustainability simply means ability to sustain "*ongoing concern*" of microfinance institutions without the use of subsidies. Various authors, such as Sharma and Nepal (1997), Woolcock (1999), Woller et al. (1999), Tucker and Miles (2004), and Pollinger et al. (2007) expressed their views on sustainability. It is defined as the ability to sustain viability of a program without recourse to both domestic and foreign subsidies; surplus of operating income over operating cost; and ability to cover annual budgets without donations, grants and other fundraising. The emphasis on microfinance sustainability is spurred by the belief that it can help MFIs to gain economies of scale and reach larger numbers of borrowers. Gibbons and Meehan (1999) noted that sustainable microfinance institutions easily gain access to private capital or loans which empower them to lend more to their clients and in turn improve repayment rate. Sustainability is attained through profit seeking by raising interest rate but not necessarily implies total eradication of subsidies (Tucker and Miles, 2004). In the work of Brewer et al. (1996) on Small Business Investment Companies (SBICs)

performance during 1958 – 1996 pointed to the danger subsidies such as having access to subsidized funding. While Gulli (1998) emphasizes the need for microfinance institutions to charge enough interest rate to cover operational costs. The reason for continuous reliance on subsidies was identified in the work of Tang et al. (2002) as failure to charge sufficient interest rate within the ambit of law to cover associated expenses and risks of microfinance operations.

The drive for profit seeking moves microfinance toward sustainability but not without other challenges. For example, Tucker and Miles (2004) noted that sustainability could threaten poverty reduction objective of microfinance by limiting access of the poor to capital. The increasing scale of microfinance resulting from microfinance sustainability, if not properly managed, can itself increase portfolio at risk and bad debts of microfinance institutions (Gulli, 1998).

CGAP (2004) shows that interest rate ceilings as obtainable in about 40 developing and transitional countries could hurt the poor by making recovery of high administrative cost of small loans impossible, cause unintended effects and reduce transparency about true cost of loans. The study suggests that the best way to reduce interest on micro loans without promoting microfinance un-sustainability was to encourage innovation and competition in the industry as this would improve efficiency and lower prices. Whereas, abusive lending with no regard to repayment capacity, unacceptable collection techniques and deceptive terms of contracts could harm the poor more than high interest rate. The increasing drive and call to profit oriented microfinance motivated Roberts (2013) to examine

relationship between interest rate and commercialized of microfinance institutions. The study consistently affirmed positive relationship between profits oriented MFIs and high interest, but the result also showed that higher interest rate did not translate to higher profitability. To test the fear by some that profit maximizing interest rate would make MFIs to compromise its original objective, Dehejia et al. (2012) examined the impact of increasing interest rate on MFIs loans in the slums of Dhaka. They estimated interest elasticity that range between -0.73 to -1.04 using unanticipated between-branch variations in prices with the result pointing to the upper end of the range. The result of the study shows that increase in income of MFIs arising from high interest was from increased earnings from better off customers, but the demand for loans by new and smaller-scale clients fell.

Wambugu and Ngugi (2012) emphasized the necessity of microfinance institutions to be sustainable in order to reach more poor in the society as this would help the industry to source more capital instead of relying on subsidies. In achieving such objective, the study investigates factors that could aid sustainability using random sampling of 30 per cent of the total population of 135 lower and middle staff of Women Finance Trust Deposit taking microfinance institution in Kenya. The findings from the study show that branch network, services delivery, capital adequacy and staff training are four important variables influencing sustainability. Contributing in a pragmatic way to eliminate poverty in Africa, Tehulu (2013) pointed out that microfinance institutions must be sustainable. Giving that in focus and prevalence of poverty in East Africa, the author was compelled to examine

empirically the determinants of financial sustainability of microfinance institutions in this region. The study basically used unbalanced panel data of 23 microfinance institutions in East Africa during 2004-2009. The findings from the study show that financial sustainability is driven positively by size and loan intensity, it also shows that portfolio at risk and management inefficiency has negative influence on sustainability while the impact of deposit mobilization and outreach were not significant.

Moreover, Adongo and Stork (2005) used ordinary least square in cross-sectional framework to examine factors driving the financial sustainability of some microfinance institutions in Namibia. The study found that most microfinance institutions in Namibia are unsustainable and the degree of un-sustainability is worse for the multi-purpose co-operative than micro-lender. Further finding shows that at the start of business, donor funding has strong influence on financial sustainability. Also, Kimando et al. (2012) show that the prominence of microfinance as a strategy for poverty reduction in the recent past but acknowledged that many operators of microfinance services still struggle with sustainability of the institution. The study therefore probed into the factors the influence microfinance sustainability within the Muranga Municipality. The finding from the study indicated that financial sustainability is highly influenced by factors such as volume of credit, number of clients served, financial regulations and financial coverage but these factors are interwoven and interconnected.

In addition, knowing the key objective of microfinance institutions as poverty reduction, Rahman and Mazlan (2014) examined factors that influence financial self-sustainability of microfinance institutions in Bangladesh. Their

findings show that the greater number of microfinance institutions in Bangladesh is financially sustainable. It further shows that financial sustainability is positively driven by yield on gross loan portfolio, cost per borrower, personnel productivity ratio and size of MFIs, while number of active borrowers, age, operating expenses ratio, average loan balance per borrowers and debt to equity ratio have negative influence of sustainability. For microfinance to achieve its primary objective of poverty reduction, Ayayi and Sene (2010) observed that microfinance has become a profitable venture. They therefore sought to know empirically the factors that drive sustainability of the industry using data of 217 MFIs in 101 countries during 1998-2006. They discovered from the study that sustainability is driven strongly by high interest rate and high quality of credit. Further findings also show that age and client outreach helped the attainment of financial sustainability but the impact was relatively small, while the influence of women was negative and insignificant.

The study conducted by Nadiya et al. (2012) showed the danger of neglecting factors that could derail microfinance institutions' objective in India. The study used 50 Indian MFIs during 2005-2009 to examine factors that affect operational self-sustainability in India using multiple regression analysis. Findings from the study indicate that cost efficiency factor, revenue generation factor and growth factor positively impacted on self-sustainability, while average loan size per borrower, portfolio risk factor and development factor impacted negatively.

2.5.2 Empirical Literature on Mission Drift: A Review

2.5.2.1 Mission Drift Measurement Issues

In the recent time, various studies such as Ghost and Van Tassel (2008), Copestake (2007), Cull et al. (2007), Rosenberg (2009), Mersland and Strom (2010), Schreiner (2010), Armendariz and Szafarz (2011) and Hermes et al. (2011). They have measured mission drift with different indicators, such as average loan size, percentage of women borrowers, lending methodology, the percentage of clients in the bottom half of the population, poverty gap ratio and poverty scorecards. However, there is consensus that average loan size serves as a simple proxy indictor and therefore most studies adopt average loan size as an indicator of mission drift. For example, Cull et al. (2007) uses average loan size and percentage of women borrowers, while Mersland and Strom (2010) employs MFIs' main market, borrower's gender and lending methodology as indicators of mission drift. Hermes et al. (2011) uses other indicators such as average saving balance, average loan balance and the percentage of clients in the bottom half of the population. Ghost and Van Tassel (2008) and Schreiner (2010) suggest the use of poverty gap ratio and poverty scorecards, respectively, however, in actual practice, the last two measures are difficult to implement. This thesis uses average loan size and percentage of lending to women as measures of mission drift. Thus, a reduction in average loan size, a proxy for outreach, is likely to be associated with the increase in the depth of outreach, while the reverse holds when there is increase in average loan size and also associated with mission drift (Muller and Uhde, 2008).

There is paucity of studies that try to shed light on growing concern of microfinance mission drift in Nigeria. However, in other developing countries there are plethora of studies on this issue, however, their findings are at variance, with some affirming mission drift; others refute it while some call for further research on the issue. Studies such as CGAP (2001), Milgram (2001), Dichter (2002) as cited by Hishigsuren 2004, Dehejia et al. (2005), Coleman (2006), Cull et al. (2007), Hishigsuren (2007), Cull et al. (2009), Maskay (2011), Serrano-Cinca and Gutierrez-Nieto (2014) and Abrar and Javaid (2014) empirically proved the existence of mission drift. Others such as Gonzales-Vega et al. (1997), Christen (2000), Navajas et al. (2000), Hishigsuren (2007), Frank (2008) and Mersland and Strom (2010) did not find evidence of mission drift in their studies, while the study by Campion and White (1999) called for further research and Armendariz and Szafarz (2009), and D'Espallier and Szafarz (2013) could not ascertain whether mission drift occurred or not.

In the early 2000s, the growing entrance of commercialized microfinance institutions and the rising levels of competition, profitability and predominance of regulated institutions in Latin America prompted the CGAP to conduct a study that assessed the effect of new entry of players to the industry. The result of the study shows that the new entries promote market deepening, penetration and saturate the market. The result also indicates that larger loan balances of commercial oriented MFIs suggest that they have been driven away from their primary objective of serving the poor (CGAP, 2001).

The study conducted by Milgram (2001) in northern Philippines contrasting self-sustaining and pro-poor new microfinance program, the author discovered that the quest to become self-sustaining makes microfinance institution (MFI) susceptible to target not-so-poor clients. While Ditcher (2002) as cited by Hishigsuren (2004) used clients profiles such as rural/urban, poor/better-off and rural/urban of the NGOs MFIs to study mission drift, he found that MFIs lend more short-term loans to retail and trade in urban areas as against lending to the poor in rural area, thereby shifting focus from the poorest. Also, Dehejia et al. (2005) uses SafeSave MFI working in slums in Dakha, Bangladesh to examine sensitivity of clients to high interest associated with sustainable microfinance, they found that poor clients are more sensitive to variations in interest rate than the wealthier clients and thereby bank's portfolio shifts away from the poorest clients.

Moreover, Cull et al. (2007) employed cross-country data to examine the possibility of MFIs having profit motive and still serving the poor and confirmed trade-off between profitability and poverty reduction motive, which implies mission drift syndrome. Also, Cull et al. (2009) further corroborates their earlier finding of mission drift, using gender and average loan size to test the effect of microfinance commercialization on poverty reduction. They concluded that commercialization of microfinance is indeed a bad news for the poor, as it is associated with increasing loan size and less focus on women. The methodology proposed by Hishigsuren (2007) to better understand scaling up and social mission shows that mission drift is not a deliberate policy of MFIs' management but the product of the process of

scaling up. The changing priority and performance which many argued could lead to MFIs abandoning its original mission of improving welfare of the poor prompted Maskay (2011) to study Paschimanchal Grameen Bikas Bank (PGBB) founded in 1995 in Western Development Region of Nepal. The author used both quantitative approaches to examine factors that influence mission drift namely, politics, policy and institutional environment. The study found that evidence of mission drift for one and a half decade that spanned through 1995/96 – 2010/201, the finding also shows that out of three indicators used to test the performance of PGBB during the period, institutional environment is the most significant factor; the study calls for effective microfinance policy to minimize the occurrence of mission drift in Nepal.

More also, the increased drive to achieve financial sustainability motivate Wagenaar (2012) to investigate evidence of mission drift among transformed MFIs from non-profit MFIs using panel data analysis of 1,558 MFIs spanning fifteen years. The finding based on 8,794 observations indicated significantly higher average loans and significantly lower percentage of women borrower for profit MFIs than for non-profit MFIs. From the same study, the result of the smaller sample of 3,818 observations for both non-transformed and transformed NGOs out of which 511 observations are for transformed NGOs show that transformation of NGOs to profit-oriented MFIs could lead to mission drift. The results indicate that the transformed MFIs have higher average loan and lower lending to women clients than non-transformed NGOs. To test for who benefit from microfinance services between the poor and wealthy in Northeast Thailand

villages, Coleman (2006) exploited survey method sample of participants of microfinance services and non-participants i.e. those that had not benefited from the programmes. The aim was test measure the success of the microfinance programme, if the programme had succeeded in reaching the poorest of the poor. The results from the survey show that the programme had not reached the poor as much as to the wealthy and that the wealthy clients circumvent the rules and use their influence to borrow significant loans when compared with the rank-and-file clients. In view of the findings, the study recommended strict focus on the poor and enforcement of eligibility criteria.

Moreover, Serrano-Cinca and Gutierrez-Nieto (2014) used the long tail theory which is based on Pareto's 80/20 Principle to prove that some MFIs have lost focus of their mission of poverty reduction. They pointed out that MFIs mission is to empower women in rural communities that were excluded from formal financial services. Applying Pareto principle which asserts that wealth distribution within a population exhibits unequal pattern (long tail) rather than normal distribution of bell-curve. They show that MFIs clients fall into the tail of the wealth distribution category whereby transactional costs are high, need for subsidies to augment low revenue and lack of deposit. They argue that MFIs paying more attention on financial performance could lead to mission drift, they therefore, suggest efficient use of technology by leveraging on e-commerce to reduce high yield associated with tail end of wealth distribution where MFIs operates. Contributing to the debate of microfinance commercialization and mission drift, Abrar and Javad (2014) used data of microfinance institutions from 72 countries from

the six regions of the world, in a panel data framework to test for mission drift. The result from the random effect model confirms existence of mission drift owing to commercialization of microfinance and support the claim by Yunus that the industry is heading to mission drift by ignoring social objective of empowering the poor.

However, the work of Christen (2000) on MFIs in Latin America using average loan size did not empirically find evidence of mission drift of MFIs due to commercialization. Also, Navajas et al. (2000) uses different indicators of outreach in Bolivia such as depth, breadth and length of outreach, worth to users and scope of output to test for mission drift. Their finding rather shows that the depth of outreach to the poorest improves, which implies the absence of mission drift. The work of Hishigsuren (2007) gives insight to socially minded process of scaling up. Using Activists for Social Alternatives (ASA) as a case study to examine the extent by which socially minded MFIs drifting away from the mission of poverty reduction in the process of scaling up. The result of the findings show that mission drift was not as a result of management deliberate decisions but challenges associated with the process of scaling up. Frank (2008) focuses on the effect of transformation process on some selected control 25 MFIs vis-à-vis non-governmental organizations' (NGOs) MFIs. He uses average loan size, portfolio growth, saving mobilization, client, profitability and shareholding structure indicators for the analysis. The finding re-affirms that transformation of MFIs helps to improve outreach and product services of MFIs.

To clear doubt express by Yunus and other welfarists that commercialization could possibly drift away MFIs from its primary goal of targeting the poor for poverty reduction, Mersland and Strom (2010) used data from rated MFIs in seventy-four (74) countries during 1998-2008 in panel date econometric framework to test mission drift. The finding of their study shows no evidence of mission drift but confirms positive and significant relationship between increases in average loan size and average profit and average operational costs. They conclude that rather than focusing on MFIs commercialization, attention should be focused on reducing costs to reach out to poorer segment of the society.

Also, Campion and White (1999) employs data from K-Rep, CARD and MiBanco to test and to answer some mission drift issues using loan size indicator, they find evidence of shift toward the poorer clients, conflict in customer relation and increased transaction cost. Armendariz and Szafarz (2009) opined that phenomenon of microfinance mission drift was poorly understood and that the process of scaling-up is not limited to transaction cost reduction but also a product of interplay of cost differentials between poor and unbanked rich clients, MFIs mission and other country specific heterogeneous factors. Contributing to the MFIs mission drift, D'Espallier and Szafarz (2013) observe that substantial numbers of MFIs are still subsidized despite increasing call self-sustainability in reaching more poor. The study compared unsubsidized MFIs' performances with that of subsidized MFIs with the aim to test whether each category actually achieves its aim of poverty reduction taking into cognizance their geographical disparities. Their overall finding shows that subsidized MFIs

are better-off in meeting its social objective. However, the performances of unsubsidized MFIs vary across regions, Africa unsubsidized MFIs charge higher interest rate to compensate for non-subsidization, while unsubsidized MFIs Central Asia target less poor customers and that of Latin American reduces lending to women clients to compensate non-subsidization. The study shows that absence of subsidies does not necessarily imply profit orientation but regional characteristics matters.

In a study by Christen (2000) on Latin America testing for relationship between microfinance commercialization and mission drift, he concluded that commercialization of microfinance did not show any significant difference effect on loan size between non-regulated and regulated microfinance institutions. However, the subsequent work by Olivares-Polanco (2005) on 28 Latin America MFIs using multiple regression analysis indicated that more competition lead to larger loan sizes and less depth of outreach and point to the existence of trade-off between sustainability and depth of outreach in Latin America. Zerai and Rani (2012) tested trade-off between outreach to the poor and financial sustainability in India using 2009 data of 85 microfinance institutions in correlation matric framework. The study denied the existence of trade-off between outreach and financial sustainability; it however, confirmed significant positive relationship between the breadth of outreach proxy by number of active borrowers and operational sustainability.

Moreover, to answer questions that relate to profit maximizing microfinance-lending organizations and their outreach to the poor borrowers, Conning (1999) analysed 72 profit maximizing microfinance organizations around the

world. The finding from the study shows that delegation costs and moral hazard arising from the inter-relationship among loan staff, borrowers, investors and equity-owners and endogenous monitoring influenced the outcomes of trade-off between sustainability and outreach to the poor. He recommended higher interest rates for profit-maximising organization in pursuance of sustainability. Also, Hermes et al. (2011) provides new insight to the trade-off between sustainability and outreach of MFIs employing 435 MFIs data during 1997-2007. The study uses cost efficiency as a proxy for sustainability vis-à-vis the depth out outreach proxy by percentage of women borrowers and average loan size in a stochastic frontier analysis framework. The findings from their study affirm strong evidence negative relationship between efficiency and outreach; it further shows that less efficiency was associated with outreach to the poor.

Bringing to bear the importance of regulation as it affects MFIs' performance and the attendant effects on outreach, Cull et al. (2011) used data of 245 microfinance institutions to test the relationship. The authors show that prudential regulation and supervision had enabled MFIs to raise deposit from the public but at the same time tend to raise the cost of MFIs' lending. The study finding shows that though supervision was positively related with the average loan size, it was negatively related to the percentage of women borrowers. Contributing to the literature on whether the increased self-sustainability drive has displaced the target audience of MFIs, Louis et al. (2013) uses 2011 cross-country data sample of 650 MFI to investigate the issue. The finding confirms positive relationship between financial efficiency

and social outreach; however, the result did not suggest rise in social performance even in the face of less financial efficiency.

2.5.3 Empirical Literature on Women Outreach and Repayment: A Review

Previous literature shed light on the relationship between gender and repayment but their findings remain unclear; there are divergences of views on the issue. Some studies claim positive relation exists between lending to women and repayment, some other studies provide explanations for the existence of positive relationship. Some after some controls attribute high repayment to other factors aside lending to women while some refute the claim of positive relationship between gender and repayment.

In the work of D'espallier et al. (2011) the impact of gender on microfinance repayment of loans was examined. Global dataset of 350 MFIs that cut across 70 countries was used to probe the belief that female clients of MFIs exhibit better credit risks than male counterpart. Their findings revealed that higher proportion of female lending was associated negatively with all indicators of repayment namely, portfolio at risk, provision expense rate and write-off rate. Their results further show that their interaction effects still confirm that lending to women generally enhances repayment rate and that the effect was more pronounced in regulated MFIs, NGOs based MFIs and individual lending model. Aside that gender enhances microfinance loans repayment, the subsequent work of D'espallier et al. (2013) probes evidences of likely consequences of having conscious gender bias toward female clients in microfinance. The study uses global dataset of 379 observations that cut across 73 countries to explain the possible bias that

gender bias institutions could have on financial performance. The result of this second study indicates that women bias microfinance institutions would, though, enhance repayment, but overall would not beneficial to financial performance. The finding further reveals that higher cost of smaller loan arising from focusing on women would offset the positive effect of gender on repayment. The study conducted by Godquin (2004) however supports the claim that gender enhances microfinance repayment. The study used a quasi-experimental survey data in a probit regression framework to examine the determinants of repayment performance in Bangladesh during 1991-1992. Although, the study shows that gender coefficient was negative which implies that smaller loans are allocated to female clients, and bias against women borrowing, it however shows that female clients did not have lower repayment when compare with the male clients.

Moreover, in trying to understand the determinants of repayment performance in Bangladesh, Sharma and Zeller (1997) analysed repayment rates of 128 credit groups that belong to three major microfinance institutions namely, Rangpur Dinajpur Rural Service, Association for Social Advancement and the Bangladesh Rural Advancement Committee. The result of the TOBIT regression indicates that repayment rate could be improved even in the remote villages if microfinance institutions adhere to basic prudential principles. The finding further reveals that the coefficient of gender was significant and negative on the loans delinquency dependent variable which is an indication that default rate decreases as lending to women improves. Also, Roslan and Karim (2009) examine drivers of loan repayment among microcredit borrowers from Agrobank in Malaysia. In all

2630 respondents from 86 branches of the bank were surveyed to generate data for probit and logit models used in the study. Their results show that gender of borrower significantly influence loan repayment so also the repayment period, type of business activities, training and loan size. Further analysis of their result also indicates female borrowers' default probability is lower than male borrowers. Besides, their finding shows that borrowers in productive activities have higher probability of default than those in service/ support services.

Notwithstanding the high repayment rate records of the clients of microfinance Institute Esperanza International in Dominican Republic, Salazar (2008) examines possible cause of the remaining 3 to 5 per cent default rate. The study analyses 15,104 loans shared amongst 8,991 clients during 2005 and 2007 vis-a-vis loan repayment variables which included gender and the result shows the four variables namely regional office, education gender and marital status explain variation in default rates. The result further shows that married and widowed women and those with less education default less. In attempt to examine factors driving microfinance loans repayment rate in Malaysia, Nawai and Shariff (2012) employed data from the survey on 309 respondents of TEKUN Nasional clients, Peninsular using multinomial logit model framework. The result of the study confirms that gender significantly influenced loans repayment with other variables and that pressure from microfinance institutions contribute to the delay in repayment of loans.

To test the assertion that female clients are better risks than male clients, Saravia-Matus and Saravia-Matus (2012) use a logit model that takes

cognisance of loans, economic situations and borrowers' characteristics to test gender impact on repayment performance. The study utilized Nicaraguan microfinance institution's loans during 2003 and 2004, the result was insightful as evidence shown that female clients' repayment out-performed that of the male clients at the conventional level, but when other exogenous economic conditions were factored in, the perceived difference in gender risk was lower than expected, pointing to significance of economic environment not gender in determining factors that influence repayment performance.

In trying to explain why women exhibit higher repayment of loan, Boehe and Cruz (2013) combined qualitative data provided by Desjardins International Development (DID) mission report on eight developing countries during 1970-2010, 250 pages of transcribed in-depth interview and other mission reports to examine why female clients of cooperative MFIs affect debt repayment rate. The findings of the study show that under some constraints such as limited access to education, limited professional opportunities and restricted mobility which limit women economic activities to informal market, women develop more relationship and managerial capacities than their male counterpart. These constraints consequently make women more focus on their micro business which eventually help them to pay their loans.

Contrary to earlier findings the work of Crabb and Keller (2006) suggest that lending to women would rather worsening portfolio at risk rather than improving it. They use large cross sectional data from many microfinance institutions of the world to examine risk factors in portfolios and found consistently that lending to women raises portfolio at risk which implies low

repayment. The finding also shows that the effect gender lending is mitigated by group lending, and therefore calls for the usage of both group and individual lending models in the process of scaling up the industry. Also, Afrane and Adusei (2014) test the validity of female clients' superiority to men clients in loan repayment using data of 754 loan customers from three microfinance institutions in Ghana. The results of their logistic regression model suggest that male clients are better-off than female clients in term of repayment of loans because male clients are less likely to default on their loans than female clients.

Moreover, Kamanza (2014) studied causes of default on micro-credit through survey questionnaire among women micro-entrepreneurs in Kenya using Women Enterprise Development Fund (WEDF) as a case study. The finding from the study shows that because of loans given to clients were small and not sufficient for their micro businesses the returns were low leading to defaults in repayment of loans. Also, the competing gender roles among borrowers robbed majority of the clients from focusing on their business thereby contributing to default rate. The findings from the study further show that desperate conditions and other domestic challenges of the clients influence them to divert loans for other purposes order than the intending purposes and this was predominant among married women.

There are studies that exist on Nigeria, they include Njoku and Odii (1991), Oke et al. (2007), Eze and Ibekwe (2007), Ugwumba et al. (2008), Ugbomeh (2008), Oladeebo and Oladeebo (2008), Mkpado et al. (2010), Julius and Aminant (2011), Onyeagocha et al. (2012) and Nwosu et al. (2014). For example, Njoku and Odii (1991) examine factors that account

for the low repayment rate of about 27 per cent under the Special Emergency Loan Scheme (SEALS) in Imo state, Southeastern Nigeria, a scheme that seek at providing short-term micro loans to smallholders for food production. The finding from the study shows that cumbersome loan application processes, political influence, loan diversion and low returns, amongst others significant factors, contribute to low repayment rate.

On average, microcredit repayment rate in Southwestern Nigeria rate was estimated to be 90 per cent by Oke et al. (2007). The study employs linear multiple regression analysis to examine variables that could explain iis high repayment rate using multi-stage stratified random sampling method to generate the data from 200 clients of microfinance institutions in the area. Their result shows that, although, clients of microcredit institutions are credit worthy but the remaining 10 per cent loan defaults was due to poverty of members. Also, Eze and Ibekwe (2007) randomly survey fifteen communities in Orlu Local Government of Imo State to examine factors that influence indigenous financial institutions' clients' loan repayment and it was found that loan size, age of the clients, occupation years of educations and household size are the principal variables that drive microcredit repayment rate.

In trying to understand the drivers of microfinance cooperators' loan repayment in Anambra State, Ugwumba et al. (2008) surveyed 95 cooperative societies that got loans from NACRDB in central Senatorial Zone of Anambra State which made up of 7 local government areas. The findings from the study show that over 62 per cent of the co-operators repay their loans as at when due and that other variables such as cost of

investment, access to information, social cultural activities and amount of loan significantly and positively related on repayment of loan. Although this study was based on survey methodology which could be subject to sampling bias, it did not cover the impact of gender which is the focus of this thesis. Ugbomeh (2008) also examines the determinants of loan repayment from some selected women self-help groups in Bayelsa state Nigeria. Multistage sampling technique was used to survey about 112 clients who are women farmers and had benefited from microcredit. The finding from the study shows that women household heads, household size and interest rate account for the 17.3 per cent default rate while group formation and price stability of farm proceeds drive the 83.7 per cent of the repayment rate. The study conducted by Oladeebo and Oladeebo (2008) seeks to understand socio-economic factors driving loan repayment among small scale farmers in Ogbomosho agricultural zone of Oyo state in Nigeria. Five local government areas were selected for the study and multi-stage sampling technique was also adopted for the selected 100 respondents within the selected areas. The data generated from the survey was analysed using ordinary least square multiple regression technique. Their finding shows that loan size, level of education and years of experience of farmers significantly and positively influences loan repayment while age of farmers negatively impacted on loan repayment.

Also, the study conducted by Mkpado et al. (2010), survey a total of 45 micro-credit group in nine local government of area of Enugu State using multi-stage sampling techniques. The results of their study suggest the significance of gender, social cohesion, occupation, distance and residency

in explaining micro-credit repayment. The study is limited in coverage which limits its general application and could also subject to sampling errors. Moreover, Julius and Aminant (2011) use Chi-square non-parametric method of analysis to understand factors that underlie conscious gender bias toward women in Nigeria. A stratified random sampling technique was applied to select states, local governments and people living in rural areas in the survey. The finding from their study suggests that targeting women is not significant by targeting the poor as a whole. The study did not really shows the effect of focusing on gender on repayment of microfinance institutions in Nigeria.

In the empirical work Onyeagocha et al. (2012) that attempted to understand the determinants of loan repayment of microfinance institutions in the Southeast States of Nigeria. The coverage was limited to three states namely Imo, Ebonyi and Enugu out of five states from southeast region. The authors used cross-sectional data and multi-stage sampling technique to select 36 MFIs from the three states. The findings from the study indicates that the repayment rates for formal, semi-formal and informal microfinance institutions are 56.6, 84.9 and 100 per cent, respectively, and average repayment for institution is 80.5 per cent. The finding further shows that gender variable is not significant in explaining repayment but training duration, loan size, outreach and experience of credit officers have significant impacts. A similar study was conducted by Nwosu et al. (2014) that examine access to loan and repayment performance of livestock farmers under the Agricultural Credit Guarantee Scheme Fund in Southeast, Nigeria. Out of the existing five states in the Southeast, two states were

choosing for the analysis namely, Imo and Ebonyi states and the data generated from the simple random survey technique were used to estimate regression model. The result of the factors influencing loan repayment shows that total income, education, age, livestock value and household size significantly influencing loan repayment.

A critical appraisal of studies conducted on Nigeria show that first, they are limited in scope; second, they are majorly based on survey methodology and third, they focus on general determinants of loan repayment. For example, the scope of most of the reviewed studies are either limited to two or three states out of the 36 existing states or at maximum, on one geo-political zone out of six existing zones in Nigeria. This defect makes it difficult to apply majority of the findings to the entire country as a whole. Second, nearly all the reviewed studies are based on simple random survey techniques which are prone to measurements errors and other estimation biases. Lastly, these studies did not specifically address the research question, whether greater focus on women could improve microfinance loan repayment.

2.5.4 Review of Approaches of Impact Studies

This section reviews different approaches of microfinance impact studies. It reviews the existing empirical literature on these approaches in the past two decades with a view to bring to fore various methodologies, outcome variables and findings on the subject matter. See appendix 3 for the details of the review.

Estimating the impact analysis of microfinance has been an onerous task because measuring relationship between microfinance credit and outcome variable of interest is influenced by the focus or level of analysis and methodological challenges. For instance, different levels for which microfinance impact is analysed, which could be individual, household, enterprise, community, institutional can affect the outcome variables (FEMIP, 2008). Moreover, country specific effects such as political instability, macroeconomic environment, economic depression, amongst others, which are not integrated in the impact models can influence the final result (FEMIP, 2008). More importantly, Hulme (2000) identified major methodological problems of selection bias and fungibility which could arise because of differences in invisible characteristics between treated and control group, locational selection and micro credit fungibility amongst others. Fungibility arises if the micro credit or loan is not use for the intended purposes. Fungibility of credit remains critical unresolved issue in microfinance impact analysis. It arises mainly from inability of poor households to separate household activities from micro enterprises and could lead to over estimation of microfinance impact analysis (Khandker, 1998b and Husain, 1998).

The review of methodological approaches to microfinance identified five methods of measuring the impact of microfinance on the outcome variables namely, randomised control trials approach (RCTs), pipeline approach, with/without approach, analytical approach and natural experiments approach (Duvendack et al. 2011). These approaches are explained in greater detail in appendix 3

2.6 Conclusion

This section has examined the conceptual and theoretical issue of microfinance. Conceptual issues focus on definition of microfinance while the theoretical examined the transmission mechanism by which microfinance affects development. It has also carefully reviewed the existing empirical studies on drivers of microfinance sustainability, interest rate, mission drift and women outreach and repayment. Also, there are divergences of findings owing to differences in methodologies and focus of studies over the review periods. From the reviewed empirical literature, it becomes clear that divergence of views exist on these issues that call for empirical re-examination, especially in Nigeria, where some of these issues have not been subjected to empirical test. In some few cases where related studies had been conducted in Nigeria, such studies often lack reliable data and wider coverage of the industry. In addition, the thesis reviewed microfinance impact studies and its effect on the well-being of the society.

Chapter 3

Microfinance Institutions in Nigeria: History, Regulatory Framework and Performance

3.1 Introduction

This chapter focuses on the history of evolution, regulations and performance of microfinance institutions in Nigeria. The first section traces the history of microfinance institutions. It reviews the regulatory framework of microfinance banks in Nigeria. The chapter also appraised the performance of microfinance banks in Nigeria during 2011 – 2014.

3.2 History of Microfinance Institutions in Nigeria

The history of microfinance institutions in Nigeria has evolved over the years from native microfinance institution to financial cooperative, NGOs and government microfinance initiatives (Table 3.1).

Table 3.1: Evolution of Microfinance Institutions in Nigeria

Types of Microfinance Institutions	**Features**
(1) Native microfinance	History of native MFIs dated back to the practice of rotating savings and credit association (RoSCA) among the Yoruba in the western region of the country in the 16th century (Seibel, 2004).
	The members contribute financial resources and later allocate it to members in form of loan (Seibel, 1970).
	Savings are usually high among members.
	Siebel and Marx (1984) showed that monthly saving contribution of each member on esusu averaged US$4.03 with average loan size of about US$2.00. capital averaged US$3,027.14 in 1984,

	Deposit collections from members are usually done on market days which could be daily, weekly and monthly or through house to house personal visit of members by the collectors (Seibel, 2004)
	Group delivery methodology is a common feature of native microfinance in Nigeria. People of common interest usually form thrift groups, the common interest may be as a result of age group, common trade and profession
	Leadership selection processes is usually not formal but are strongly influenced by norms and ethics of the society such as family background, stature in the society and moral characters (Ehigiamusoe, 2011).
	The mode of operations of native microfinance in Nigeria is informal; it does not strictly adhere to written document, the mode of operations change as situation and time changes (Ehigiamusoe, 2011)
	The pricing i.e. interest on loans of native microfinance are usually low because they are limited in scope and their objective is not profit making but welfare of members, who are mostly unregistered and informal (Ehigiamusoe, 2011)
(2) Financial Cooperative initiatives	Financial cooperatives originated from formation of two cocoa farmer associations namely the Ibadan Agricultural Society and Agege Planters Union in 1904 and 1907 in the western part of Nigeria, respectively (Agbo, 2009).
	The associations were set up primarily to extend credit to members to improve the quality of their cocoa products (Agbetunde, 2007).
	The growth subsequently attracted government attention and recognition which resulted in establishment of fermentaries which later became modern cooperative societies in Nigeria (Ighomereho et al. 2012).
	The total number of registered thrift and credit societies subsequently grew significantly by 466 per cent from 32 in 1939/40 to 181 in 1943/44, the number further increased to 314 in 1949/50. Membership number of the societies also grew from 1,203 in 1939/40 to 5,908 and 14,285 in 1943/44 and 1949/50, respectively (Ehigiamusoe, 2011).
	The discovery of oil and subsequent huge revenue from oil inflow motivated government to intervene in cooperative societies by providing external subsidies to make the cooperatives more attractive

	(Marx and Seibel, 2012).
	The external subsidies did not produce the expected results, it rather generated unnecessary political inference, tribalism and lesser procedures for granting of loans which eventually led to lower loan recovery, lower saving propensity and the predominance of external loans and total liabilities of the cooperatives (Marx and Seibel, 2012).
(3) Non-Governmental Organisations (NGOs) Microfinance	The emergence of NGOs microfinance was motivated by social and developmental challenges in the 1980s such as low education, human right violations, and large number of unbanked population, epidemic and environmental degradation, amongst others (Ehigiamusoe, 2011).
	The early NGOs therefore focused primarily on poverty alleviation but over time microfinance started to be their leading programme.(Ehigiamusoe, 2011).
	The early NGOs microfinance mostly dependent on donor funding, because their initial capital were small and the contributions from borrowers were inadequate to meet the demand for loans (Ehigiamusoe, 2011)
	The scope of their outreach is often limited by their defined objectives because they are not out to offer different range of services (Ehigiamusoe, 2011).
	Most early NGO-MFIs in Nigeria focus in reaching out to rural women (Ehigiamusoe, 2011).
	The NGO-MFIs in Nigeria commonly employed group delivery methodology to reach out their clients. Clients are asked to organize into group, but where there are some existing age groups or business groups, they leverage on the existing groups, because rural beneficiaries live communally because they often belong to the same kinship, gender and trade (Ehigiamusoe, 2011).
(4) Government Microfinance Initiatives	**(a) Peoples Bank of Nigeria**
	Peoples Bank was established in 1989 as a direct response to undesirable effects of SAP introduced in 1986 (Enendu et al. 2010; Ehigiamusoe, 2011).

	The bank was wholly owned by the government and tailored to replicate Grameen Bank of Bangladesh with the idea to be a pro-poor bank. The bank focused on the poor and basically targeted petty traders, artisans and farmers (Ehigiamusoe, 2011).
	The bank used group delivery system to reach out to its clients and intending borrowers which are usually member of the same community were asked to form credit groups before they could receive credit (Ehigiamusoe, 2011).
	The initial total assets of the bank of about US$30.6 million in 1990 fell to about US$60.0 million in 1998, however, the rate of the assets growth fell from 57.4 per cent in 1992 to 19.9 per cent in 1998, showing the dwindling fortune of the bank owning to poor repayment rate (Enendu et al. 20100; Ehigiamusoe, 2011).
	The systemic distress of banking industry in Nigeria led to the total collapse and closure of the Peoples Bank in 2004 (Enendu et al. 20100; Ehigiamusoe, 2011)
	(b) Community Banking
	Community banking was introduced in 1991 in Nigeria to complement the then existing Peoples Bank (Enendu et al. 2010); Ehigiamusoe, 2011).
	Community banking was designed to be operated and capitalized by the local community rather the government (Ehigiamusoe, 2011).
	The aim was to extend the financial services to low income people especially the rural and urban poor who usually operate in the informal sector (Ehigiamusoe, 2011).
	The community bank was to be giving loan beyond what Peoples Bank could give and which commercial bank would deem too small to give to the local farmers and for those in food processing projects (Enendu et al. 2010).
	Data from the National Board for Community Banks showed that within six months of its formation 1,055 applications for licensing were received, 593 applications were approved, 93 community banks were incorporated and 30 community banks were issued licenses.
	Community banks were operated between 1991 and 2004, within the period of its operations, the numbers of community banks grew significantly, it rose from 66 banks to 1,368 banks in 1996 (CBN, 2005).

	During this period, the average deposit liabilities of the existing community banks was N2.88 million or US$0.13 million while the average loans and advances was estimated N1.07 million or US$0.05 million (CBN, 2005).
	In 1997, the numbers of community banks decreased by 26% from 1,368 in the previous year, the number further declined to 769 and 753 in 2002 and 2004, respectively (Enendu et al. 2010). However, the average deposit liabilities and average loans and advances improved (Enendu et al. 2010). The average deposit liabilities of community banks during 1997 to 2004 was estimated N20.21 million or US$0.15 million while the average loans and advances was N9.92 million or US$0.07 million (Enendu et al. 2010).
	Challenges of community bank included non-performing loans which hindered them from meeting the demand of the depositors, under-capitalisation, poor governance, lack of involvement of the local community and lack of adequate qualified manpower in many community banks ((Enendu et al. 2010; Ehigiamusoe, 2011).
	In 2004, all existing community banks were asked to change to microfinance banks provided they meet the stipulated requirements of the central bank (Enendu et al. 20100; Ehigiamusoe, 2011).
	(c) Family Economic Advancement Programme (FEAP)
	FEAP was initiated 1997 by the government with the initial capital of N4.3 billion or US$0.80 billion.
	FEAP aims at providing loan to the poor directly at ward level to enable them run cottage enterprises, engage in training activities and promote production and thereby reducing unemployment and rural-urban migration.
	To access the fund, the intended borrowers were requested to either join existing cooperatives or form new ones. The cooperatives were then mandated to produce 10% of the counterpart funding of the loan they applied for. The loan applied for must be tied to approved projects that are within the coverage of FEAP.
	The interest rates on loans are far below the prevailing market rates as only 10% interest on loan was charged for all categories of projects. The disbursement of the fund was done through the commercial bank so as to properly scrutinize loans application.

	The fund was fully owned by the government, it was subject to all kind of abuses and political interference which eventually defeated the objectives of the fund
	(d) Agricultural Credit Guarantee Scheme
	The scheme was initiated in 1977 in response to commercial banks' refusal to lend to farmers due to high risks involved (Ehigiamusoe, 2011).
	It provides guarantees to both principal and interest on loans commercial banks lend to agricultural sector of the economy. The fund, at inception guarantee 75% of machinery inputs for both food and cash crops such as bananas, vegetables, cereals, groundnuts, tubers, pineapples, beans, oil palm, cotton, rubber, coffee, tea and cocoa (Anyanwu et al. 2010).
	Since the scheme inception between 1978 and 2006, a total sum of US$116.4 million had been guaranteed (Anyanwu et al. 2010).
	Interests on loans were fixed by the government, at inception of the scheme, interest rate was fixed at 5% but the rate had been subsequently reviewed over time (Anyanwu et al. 2010; Ehigiamusoe, 2011).
	In order to encourage more participation of farmers and improve repayment rate, the Interest Draw Back (IDB) incentives was introduced to the fund in 2003 (Anyanwu et al. 2010). The incentive rewards borrowers who were able to repay their loans within a period not exceeding three months of due date with the refund 40% of the interest charged on loans (Anyanwu et al. 2010).
	The drawbacks of the fund includes poor public perception that loans are part of share of national cake, lack of total commitment of successive governments, partial commitment of commercial banks and exclusion of rural intended beneficiaries, especially rural women (Ehigiamusoe, 2011).
	(e) Other Government Credit Schemes
	In attempt to promote medium scale enterprises and create employment, government of Nigeria at various periods had initiated affordable credit schemes such as employment creation loan scheme, small scale industries credit scheme, mature people loan scheme, small and medium enterprise loan scheme and agricultural credit guarantee scheme.

	The objectives of these schemes included providing loan to unemployed graduates, small sclae industries and provide opportunities for enterprising individuals.
(5) Private Sector Microfinance Initiatives	**(a) Money-lenders**
	Money-lenders are not under the purview of the regulatory agency and their operations cover both rural and urban areas.
	In Nigeria, money-lenders enjoy regular patronage because of the huge gap between demand for credits by poor and the supply of credits by the formal financial institutions (Ehigiamusoe, 2011).
	Major features of money-lenders in Nigeria included high interest rates well above the rates charged by the commercial banks, their capital are purely private, easy access to their loans and repayment period are short (Ehigiamusoe, 2011).
	(b) Mobile Savings Collectors
	Mobile savings collectors are thrift minded individuals who have informal arrangement to be receiving some specific amount of money, or contributions from the willing members of the society on regular basis; the contributions could be weekly or daily depending on the terms of agreement (Ehigiamusoe, 2011).
	The collectors simply move about to visit the contributors in their houses, shops, market places to collect the money (Ehigiamusoe, 2011).
	The collectors lend money to needing members of the general society with high interest rate. The success of mobile saving collector is solely based on trust, such trust emanate from long-term observations, integrity, wealth and family background of the collectors (Ehigiamusoe, 2011).

3.3 Review of Legal and Regulatory Framework of Microfinance in Nigeria

The CBN is responsible for licensing of microfinance banks in Nigeria. After approval-in-principle for licensing is granted by the CBN, would-be microfinance banks are required to register with the Corporate Affairs

Commission (CAC), in compliance with the *Companies and Allied Matters Act* (CAMA) 1990. The CBN drives its regulatory powers from section 33 subsection (1)(b) of the CBN Act 7 of 2007 and the provisions of Section 61-63 of the Central Bank of Nigeria and Other Financial Institutions Act (BOFIA) 25 of 1991 (as amended). Prior to 2005 there was no regulatory and supervisory framework for microfinance banks in Nigeria, a formal regulatory and supervisory framework was released by the CBN in December 2005, being the apex bank in Nigeria. In the revised regulatory guidelines released in December 2012, the definition microfinance bank was clearly stated as " *any company licensed by the CBN to carry on the business of providing financial services such as savings and deposits, loans, domestic fund transfers, other financial and non-financial services to microfinance clients*". The remaining section of the chapter will examine these provisions from the perspective of the practice of microfinance banks in Nigeria.

3.3.1 Policy Objectives of Microfinance

The 2005 CBN regulatory and supervisory framework specifically states that the policy objectives of microfinance in Nigeria to include: making financial services accessible to unbanked population, integrating informal subsector into the formal financial system, enhancing microfinance service delivery to micro, small and medium entrepreneurs and transforming rural areas through micro loans.

3.3.2 Ownership and Licensing Requirements

The ownership and licensing requirements was not explicitly stated in the 2005 regulatory framework but came to fore in the 2012 revised guidelines.

Under the 2012 guidelines microfinance banks are permitted to be established by community development associations, individuals, foreign investors, groups of individuals and private corporate entities. The guidelines also group microfinance banks into three categories namely unit microfinance bank, state microfinance bank and national microfinance bank. A unit microfinance bank is confined to a particular location or locality with one head office and one branch within the locality and prohibited from having branches outside it locality, and required to have a paid-up capital of N20 million or US$0.13 million. While a state microfinance bank enjoys a wider scope of operation, is allowed to operate within a state and Federal Capital Territory (FCT), it is permitted to open branches in any part of the approved state subject to the CBN approval. It is also required to pay minimum paid-up capital of N100 million or US$0.63 million The third category of microfinance, national microfinance bank, is required to have a minimum paid-up capital for N2.0 billion or US$12.71 million and can operate and open branches in any part of the country subject to regulatory approval. However, different categories of microfinance banks are allowed to transform from one category to other provided the minimum regulation requirements of such categories are met.

3.3.3 Privileges and Prohibitions

According to section 2 (1 and 2) of the 2012 CBN guidelines, upon licensing approval from the CBN, microfinance banks enjoy privileges of receiving different deposits from individuals, associations and groups with exception of public sector deposits. It can grant credit to both informal and formal associations, self-help group and individual clients and is allowed to receive

and to pay interest on services render to clients in line with the existing guidelines. Registered microfinance banks are permitted to render ancillary banking services such as domestic remittance of funds and safe custody, guarantee its customers to access better credit, receiving of refinancing from CBN and other sources, operate micro leasing facilities and issuance of redeemable debentures to interested parties prior to CBN's approval. Other services and activities of microfinance banks include investment in cottage industries and income generating projects, provision of services to hedge risks, provision of professional advice to low income people, technical assistance and training to microenterprises and business development services.

Microfinance banks are prohibited from engaging in foreign exchange transactions, international commercial papers, international corporate finance, international electronic funds transfer, clearing house activities, land speculative purposes, financing gambling, drug-trafficking, firearms and leasing renting and sale/purchase to directors, officers or individual that own 5 per cent equity of the MFB without the approval of the CBN.

3.3.4 Prudential Requirements

To ensure the soundness of microfinance banks in Nigeria, the revised regulatory guidelines clearly outlined some general prudential requirements which all MFBs are to comply with; some of these requirements are outlined and explained in table 3.2 below:

Table 3.2: Prudential Requirements

Benchmarks	Requirements
Compulsory Investment in Treasury Bills	An MFB is required to invest not less than 5% of its deposit liabilities in Treasury Bills (TBs) but such investment must not exceed 10% at any given period, failure to comply would attract 1% of the amount not invested
Liquidity Ratio Capital Funds Adequacy	Maintenance of minimum ratio of 20% of deposit liabilities in liquid assets, including the investment in TBs. Capital adequacy ratio which is measured by (Capital/Risk weighted Assets Ration) is capped at 10%, in addition, every MFB is required to maintain 1:10 ratio of shareholders fund unimpaired by losses to the net credits. These requirements are subject to changes as may be prescribed by the CBN depending on the risks associated with lending. Failure to meet these benchmarks, such MFB would be prohibited from granting credit, undertaking investment, payment of dividend to shareholders, borrowing from the investing public and opening branches until the required ratio is restored.
Limit of Investment in Fixed Assets	20% of the shareholders' fund unimpaired by losses is the maximum amount that a MFB could invest in fixed assets, contravention of this provision attract a penalty of 1% of the excess investment in fixed assets.
Revaluation of Fixed Assets	An MFB is required to seek consent and approval of the CBN for revaluation surplus on fixed assets, the revaluation only apply to own premises for the period of 5 years after the date of the purchase of the assets.
Fixed Assets/ Long-term Investments and Branch Expansion	An MFB could only finance acquisition of fixed assets, long term investments and branch expansion from the shareholders' funds unimpaired by losses and that must be done with the regulator.
Maintenance of Capital Funds	To guard against erosion of capital through delinquent risk assets, MFBs are mandated to set aside some amount from profit after tax every year to ensure maintenance of capital funds.
Restrictions on Declaration of Dividend	Before an MFB could pay dividend, it is required to have made provision for pre-operational expenses, non-performing loans, and erosion of asset value, satisfy the minimum capital adequacy ratio and meet all matured obligations. Contravention of this provision attracts sanctions from the regulatory

	agency.
Limit of lending to a Single Borrower and Related Party	Exposure to individual borrower, Director or related borrowers is limit to 1% of shareholders' fund unimpaired losses while group borrowers is capped at maximum of 5%, though subject to changes as CBN deem appropriate from to time, contraventions attract sanction of N250,000.00 or US$1,587.00 and warning letter to the Managing Director.
Loan Portfolio composition	Loan portfolio composition is made of 20% for micro loans and 20% for small and medium enterprises (SMEs).
Maximum Equity Investment Holding Ratio	Maximum of 7.5% of shareholders' fund unimpaired by losses is allowed in equity investment.

Source: Revised Regulatory and Supervisory Guidelines for Microfinance Banks in Nigeria

Table 3.3: Provision for Classified Assets

Days at Risk (No. of days missed payment)	Description	Provisioning Requirement of Allowance for Probable Loss (%)
0	Performing	1
1 - 30 days	Pass and Watch	5
31 - 60 days	Substandard	20
6- 90 days	Doubtful	50
91 or more days and for restructured loans	Lost	100

Note Adopted from the Revised Regulatory and Supervisory Guidelines for Microfinance in Nigeria

3.3.5 Other Prudential Standards

In order to reflect and accommodate microfinance banks' peculiarities some other prudential requirements are spelt out in the 2012 revised guidelines. For example, unsecure loan in excess of N50, 000.00 or US$318.00 to an individual person is not permitted; however, where an individual client could be guaranteed by a group or third part, such guarantee would be acceptable and qualify as collateral.

3.3.6 Managerial Capacity Requirements

The revised guidelines provides for prudential, governance and managerial credibility. The managerial aspect provides for capacity building that helps to achieve sustainability in the long run while the governance aspect covers overall management strategy that leads the operations of individual microfinance bank. Therefore, managerial requirements cover critical functions and operations of microfinance bank such as governance, human resources management, accounts and financial management and internal audit and control system.

3.3.6.1 Governance

The revised guidelines recognise Board of Directors as the strategic apex body that determines governance of each microfinance bank. The board set policy direction, ensuring compliance to legal requirements and management accountability. Section 4(1) of the CBN revised regulatory and supervisory framework specifically state the composition and qualifications of member of the board of director for microfinance bank in Nigeria. The guidelines approve maximum of seven (7) and minimum of five (5) member of board of directors for a Unit MFB, but for a State and National MFB, the composition of the board of directors is at the discretion of the regulatory agency. To qualify as a Director in an MFB, the guidelines state that the nominee must not be an employee of any financial institution. It is also required that two (2) members of the Board other the Executive Management should have banking related experience. The executive member of the Board are permitted to hold office for a fixed period of five (5)

year and could be renewable once while the non-executive directors could only serve for fixed term of four years (4) and may be renewed twice.

3.3.6.2 Human Resources Management

The managing director is responsible for day to day operations of an MFB and recruitment of other employees. Section 4.1, subsection (2) of the revised guidelines specifically state the qualifications and experiences for top management positions such as managing directors and heads of departments. For example, the minimum qualification for managing director is first degree in any discipline with eight (8) years post-qualification experience, proven skills in microfinance and certification in microfinance banking. While the would-be head of departments are required to possess minimum of four years post-qualification experience and other requirements as apply to managing directors.

3.3.7 Accounts and Financial Management

The section 5.2(a) of the guidelines ensures that MFB keep account of all transactions that would reflect true and fair view of the state of affairs which must be compliance with the Nigerian General Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS). Signed copy of monthly returns on statement of account and other memorandum item are require to be submitted to the Directors of Financial Policy and Regulation Department of the CBN and Special Insured Institutions Department of the Nigeria Deposit Insurance Corporation (NDIC) for proper supervision of MFBs operations.

3.3.8 Internal Controls

The guidelines require every MFB to have internal audit unit that ensure all operations conform to internal rules and regulations and the existing laws in Nigeria. The internal control framework covers areas such as control environment, risk assessment, control activities, information and communication and monitoring of an MFB. As part of the audit requirements a statement signed off by at least two members of the Board on the effectiveness of the internal control that reflect the inherent risks in the operations of the MFB and the control put in place to mitigate such risks are required from every MFB. Any act of unethical behavior or attempted fraud by the officers of any MFB is reported to the regulatory agencies for appropriate sanctions. Every MFB is required to appoint an approved external auditor who must be a member of a recognized professional accountancy body Nigeria and must not in any way has interest in the organization or related to the Director or indebted to the MFB. In order to promote and encourage transparency in reporting, an audit firm could only serve an MFB for maximum of ten years. The external auditor serves as whistle-blower to regulatory agencies in case of any infraction to existing laws and regulation by the MFB which could jeopardize the interest of depositors or creditors.

3.3.9 Reporting Requirements

Section 5(3) of the revised guidelines place great premium on accuracy and timely rendition of returns and punishes every infraction in compliance with the provisions of section 58(2) of BFIA, 1991 (as amended). The guidelines require rendition of returns from every licensed MFB on the statement of

assets and liabilities, profit and loss account, schedule of loans and investments on sector basis, schedule of liabilities (deposits) on maturity basis, interest rate structure, schedule of balance held with banks and other financial institutions. They are also require to send returns on borrowing from other MFBs, credit to other MFBs, credits to Directors, credits to management staff and credits to related parties. All MFBs are also to send returns on non-performing credits, off balance sheet engagements, non-performing other assets and other memorandum items to the CBN.

3.3.10 Provisions for Other Existing Participating Financial Institutions

The regulatory and supervisory guidelines recognize the existence of other financial institutions such as deposit money banks (DMBs) and NGO-MFIs who are interested in microfinance activities in Nigeria. Section 17(1) makes provision for DMBs who are under the purview of the CBN but wishing to engage in microfinance services through its subsidiaries. Such DMBs are required to appoint experience Management team to manage microfinance unit with adequate internal control and procedure, detailed manual of operations, effective Management Information System (MIS) and loan tracking mechanism. The guidelines also mandated any DMB engaging in microfinance services submit separate returns of its microfinance portfolio apart from its normal lending activities to the regulatory authorities on monthly basis.

Section 17(2) of the guidelines recognize and make provision for the existing NGO-MFIs and membership-based MFIs who engage in credit only. These are MFIs being supervised by other government ministry but are not

under the supervision of the CBN; the guidelines restrict them from mobilizing deposit from the general public but are allow them providing credit to targeted population and raise deposits from their members. An NGO-MFI wishing to be fully licensed as microfinance bank and come under the supervision of the CBN, such organization is required to meet the stipulated provision as enshrined in the regulatory and supervisory guidelines of MFBs in Nigeria. In addition, prior to licensing, the activities of such NGO-MFI would be assessed by a recognized rating agency; the assessment focuses on the financial viability of such institution, its risk management policy, governance structure, human resource, control procedures, management information system and its accounting system. The application for transformation to MFB must state the objectives, specifying business plan, proposed name of the MFB and details of the assets and liabilities to transfer to the MFB, coupled with the draft memorandum and articles of association. However, deposit of minimum paid-up capital is not required for an existing institution if its existing capital institution is judged to be adequate by the regulatory agency.

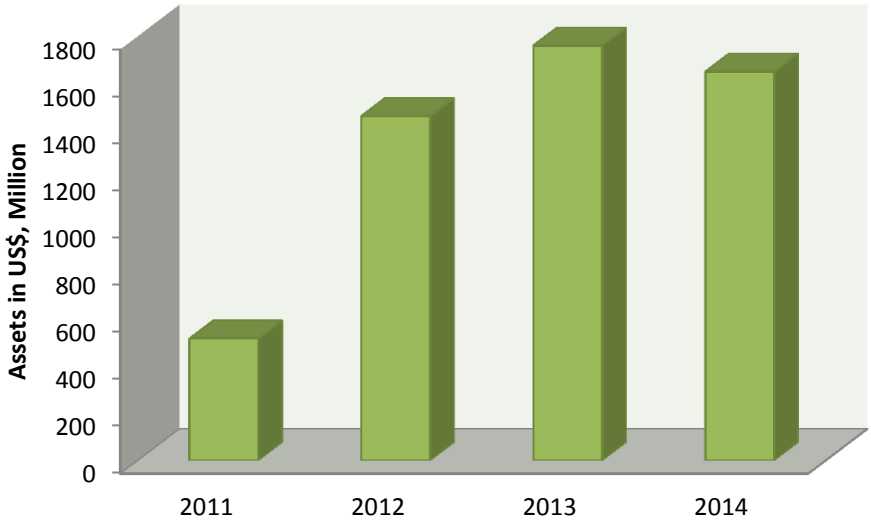
3.4 Performance of Microfinance Banks in Nigeria

The performance analysis was conducted on seven hundred and seventy (752) MFBs that had its data readily available with the central Bank of Nigeria during 2011 - 2014. It comprises of five (5) National MFBs, eighty two (82) State MFBs and seven hundred and eighteen (665) Unit MFBs in Nigeria.

3.4.1 Total Assets

The total asset of microfinance banks increased from US$516 million in 2011 to US$1.46 billion in 2012, this represent 183 per cent rise in assets. In 2013, the assets also rose by 20.5 per cent but later fell by 6.3 per cent in 2014 (table 3.1). Further analysis showed that average asset of MFB during 2011-2014 was US$2.27 million. The average assets of National, State and Unit MFBs were US66.76 million, US$5.62 million and US$1.28 million, respectively, indicating that National MFBs had the highest assets, on average.

Figure 3.1: Total Assets of MFBs



Source: Central Bank of Nigeria

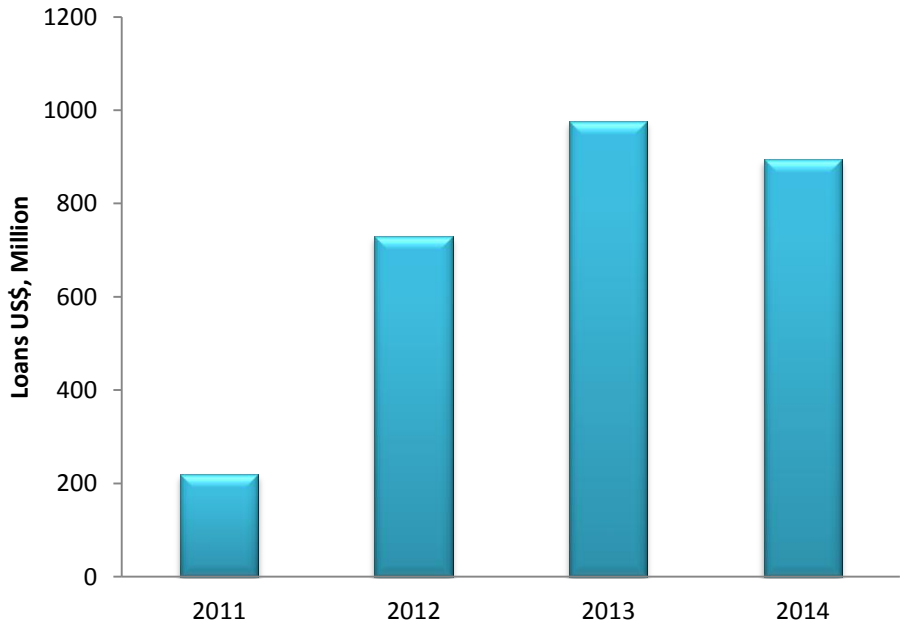
Note: Analysis was based on data from 752 MFBs existing during 2011 - 2014

3.4.2 Loans Disbursement

A total loans of US$219 million was disbursed to about 1.6 million active borrowers with women accounting for 37. per cent of the total loans disbursement in 2011. The total loans disbursed improved by 233 and 33.8 per cent in 2012 and 2013 to US$730 million and US$976 million,

respectively. The number of active borrowers also rose to 2.2 million and 2.3 million during the same period, with women accounted for 70.6 and 48.2 per cent, respectively. The performance of MFBs interm of loan disbusement however fell in 2014 by 8.3 per cent to US$895 million but the number of active borrowers increased to 3.7 million.

Figure 3.2: Total Loans of MFBs



Source: Central Bank of Nigeria

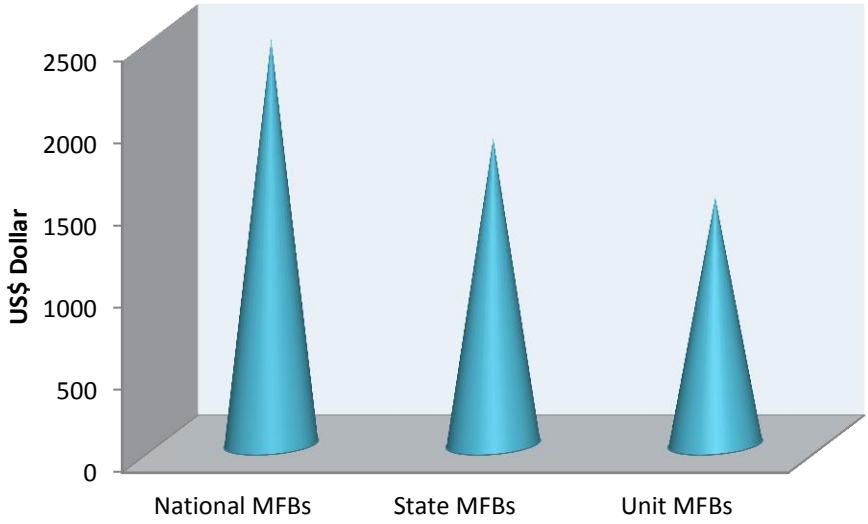
Note: Analysis was based on data from 752 MFBs existing during 2011 - 2014

Further analysis in term of average loans size among different types of MFBs during 2011-2014 showed that national MFBs had the highest average loan size of US$2,460 while average loans size state and unit MFBs were US$1,850 and US1,500, respectively. The national MFBs also recorded highest lending of 62 per cent to women.

The high lending by national microfinance to women is not surprising as national MFBs comprise five MFBs, two of which, namely Nigerian Police

Force (NPF) microfinance bank and Lift Above poverty Organisation (LAPO) microfinance Bank are strictly women focused . The NPF microfinace is owned by the association of wives of Nigerian police officers while LAPO microfinance was modelled after Gramen Bank focusing on women empowerment. The unit MFBs which hadaverage loans size of US$1,500 alsorecorded the least lending to women of about 47 per cent.

Figure 3.3: Average Loans Size of MFBs



Source: Central Bank of Nigeria

Note: Analysis was based on data from 752 MFBs existing during 2011 - 2014

The third category, state MFBs has average loans of about US$1,860 and 49 per cent lending to women (figure 3.3).

Table 3.4: Selected Microfinance Banks' Indicators

	National Microfinance Banks	State Microfinance Banks	Unit Microfinance Banks
Number of Microfinance Banks	5	82	665
Portfolio-At-Risk (%)	5	15	28
Average Loans Size (US$)	2,460	1,860	1,500
Average Interest Rates	47	27	31
Percentage of Women Borrowers (%)	62	49	47

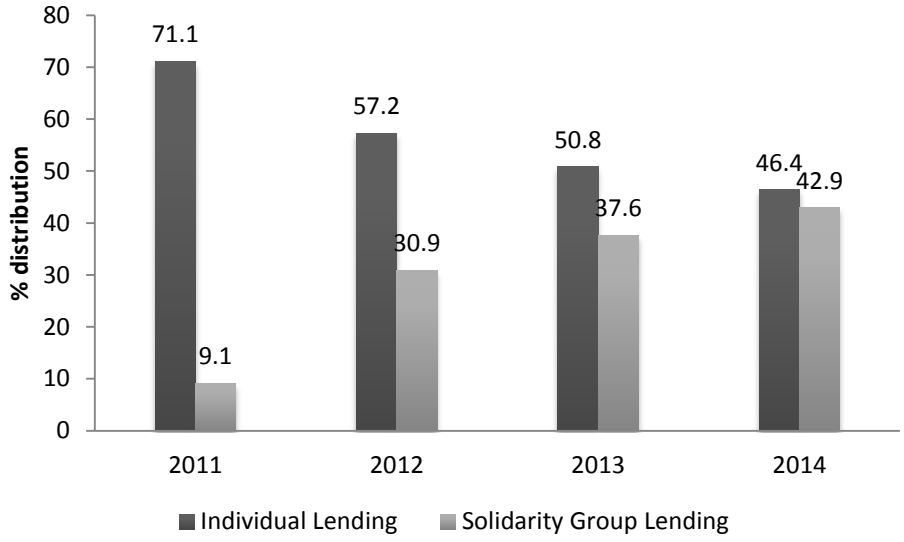
Source: Central Bank of Nigeria

Note: Analysis was based on data from 752 MFBs existing during 2011 – 2014.

3.4.3 Lending Models

Analysis of lending methodology of MFBs showed that, most MFBs initially preferred individual lending model as it accounted for 71.1 per cent of the total lending in 2011. The second notable methodology is solidarity group lending which accounted for only 9.1 per cent in 2011. However, the trend analysis showed that the proportion of individual lending methodology fell consecutively over the years. The proportion of individual lending methodology fell from 2011 position to 57.2, 50.8 and 42.9 per cent in 2012, 2013 and 2014, respectively (figure 3.4). The solidarity group lending which initially accounted for 9.1 per cent of the total lending however increased consecutively to 30.9, 37.6 and 42.9 per cent in 2012, 2013 and 2014, respectively (table 3.5).

Figure 3.4: MFBs' Loans by Lending Model



Source: Central Bank of Nigeria

Note: Analysis was based on data from 752 MFBs during 2011 - 2014

The remaining lending methods namely neighbourhood and small revolving fund lending, village banking and others only averaged and accounted for 5.7, 1.8 and 6.1, during 2011 – 2014.

Table 3.5: MFBs' Loans by Lending Models

% distribution	2011	2012	2013	2014
Individual Lending	71.1	57.2	50.8	46.4
Solidarity Group Lending	9.1	30.9	37.6	42.9
Neighbourhood and Small Revolving Funds Lending	8.5	4.3	4.6	5.4
Village Banking Lending	2.3	1.0	2	1.7
Others	9.1	6.6	5.1	3.7
Total	100	100	100	100

Source: Central Bank of Nigeria

Note: Analysis was based on data from 752 MFBs from CBN

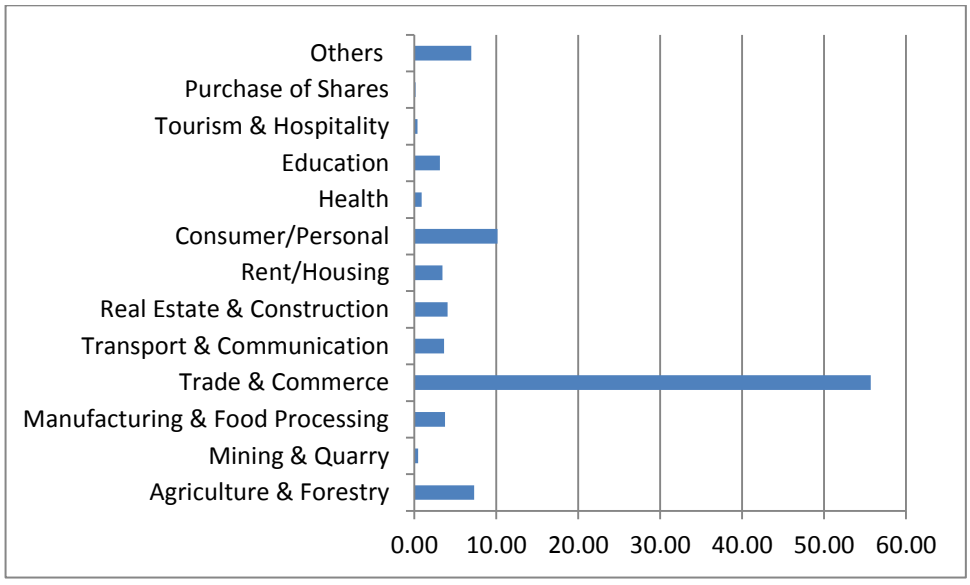
3.4.4 Sectoral Allocation of Loans

Analysis of sectoral allocation of loans by the MFBs indicated that trade and commerce subsector received highest loan allocation. It accounts for 55.7 per cent of the total loans followed by 10.2 per cent for consumer/personal.

In Nigeria, most MFBs prefer to lend to market women and men who can quickly use the loans for trading with promising returns, this could explain the larger share of trade and commerce in the MFBs lending pattern.

Surprisingly, the agricultural and forestry that engaged greater percentage of the poor in Nigeria only had 7.3 per cent of the total loan during the period. Agriculture and forestry sector' lending in Nigeria is associated with higher volatility due to unpredictable weather conditions, therefore most of the commercial and MFBs try to avoid lending to the sector to minimize risks. Other critical activities such as health, education and transport and communication did not receive noticeable patronage as they only account for 0.9, 3.1 and 3.6 per cent, respectively. The neglect of MFBs lending to critical sectors that employ greater percentage of the poor in Nigeria might suggests possibility of mission drift but is not sufficient to prove it. However, consumer/personal received a noticeable number of loans of about 10.2 per cent of the total number of loans disbursed.

Figure 3.5: Sectoral Allocation of Loans (%)



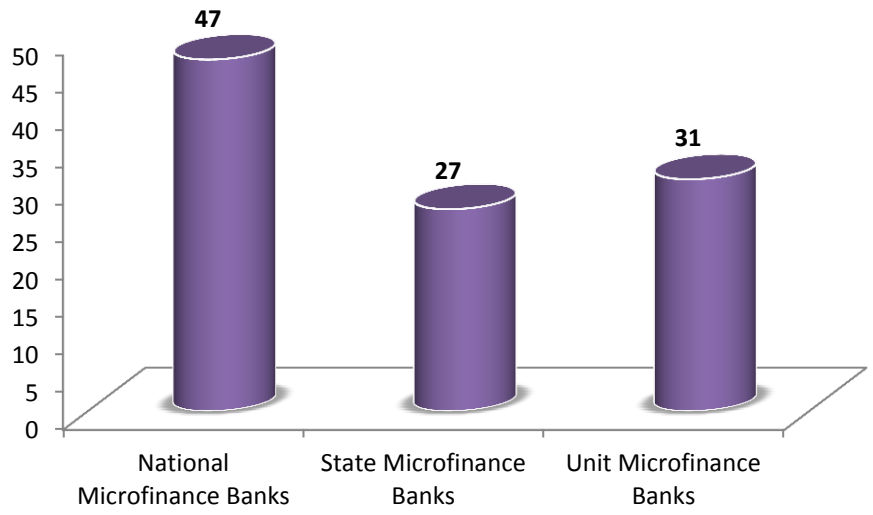
Source: Central Bank of Nigeria

Note: Analysis was based on data from 752 MFBs during 2011 - 2014

3.4.5 Interest Rates

It is common knowledge that interest rate charges on micro loans by MFBs in developing countries are generally high and some argue that it could lead to mission drift while other argue that it would increase the depth of outreach. Analysis of interest rate in this section is quite revealing, interest rates of MFBs in Nigeria averaged 31 per cent. Further analysis showed that interest rates are diverse among various types of microfinance banks, in some cases they are very high, while in other cases moderate. For example, average interest rate of national MFBs is as high as 47 per cent on annualised basis, compared with average interest rates of 31 and 27 per cent for unit and state MFBs. In general, these interest rates could be said to be relatively high which might suggests that in Nigeria, poor borrowers care less about interest rates but access to credit as emphasised by the promoters of sustainability.

Figure 3.6: Interest on Loans and Advances



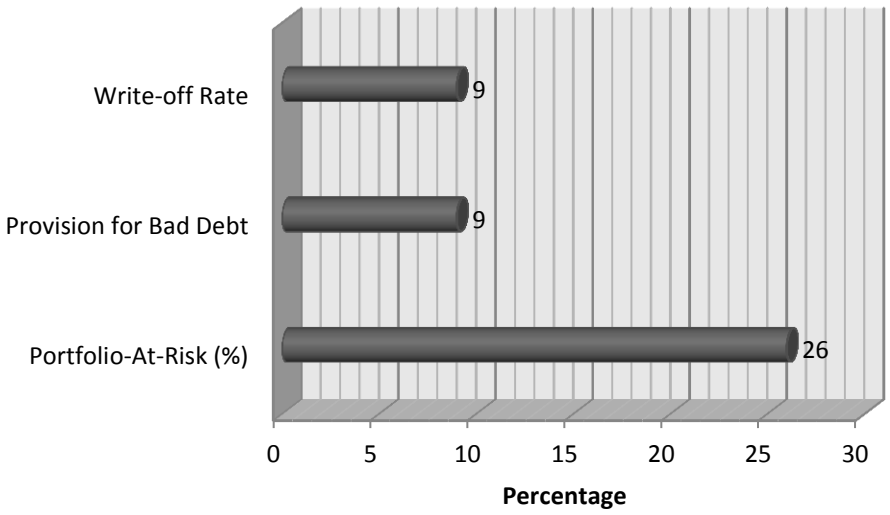
Source: Central Bank of Nigeria

Note: Analysis was based on data from 752 MFBs during 2011 - 2014

3.4.6 Performing and Non-performing Loans

Analysis of non-performing loans for the whole MFBs industry during 2011 - 2014 showed that portfolio-at-risk, provision for bad debt and write-off rate were 26, 15.6 and 2.9 per cent. Whereas, the total performing loans of MFBs was over 70 per cent of the total loans (figure 3.7).

Figure 3.7: Loan Classification

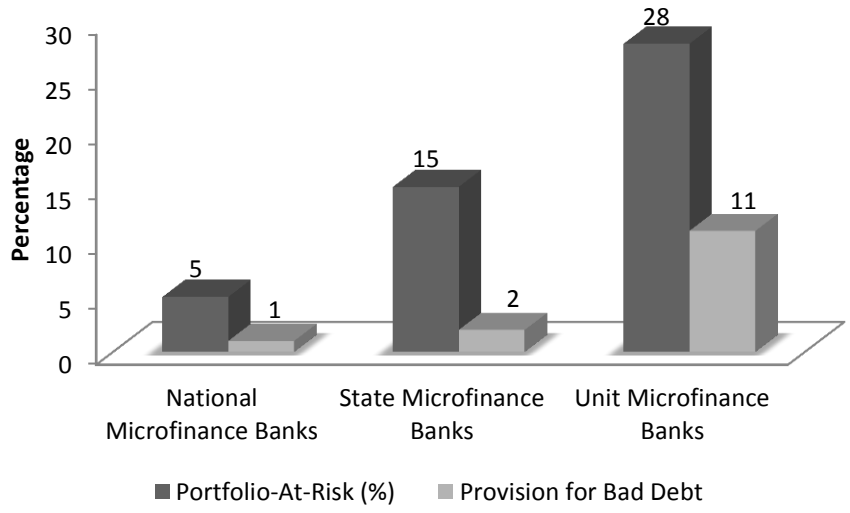


Source: Central Bank of Nigeria

Note: Analysis was based on data from 752 MFBs existing 905 during 2011-2014.

Further analysis showed that unit MFBs which recorded the lowest average loan size had the highest portfolio-at-risk and provision for bad debt of 28 and 11 per cent, respectively. However, the national MFB that had the highest average loan size was associated with the lowest portfolio-at-risk of 5 per cent and provision for bad debt of 1 per cent. This implies the unit MFB might be more vulnerable to loan defaults. The state MFB maintained the middle position of 15 per cent of portfolio-at-risk and 2 per cent for provision for bad debt (figure 3.8)

Figure 3.8: Loan Classification by MFB Types



Source: Central Bank of Nigeria

Note: Analysis was based on data from 752 MFBs existing during 2011-2014

3.5 Conclusion

This chapter has traced the evolution and reviewed regulatory framework of microfinance institutions in Nigeria. The review shows that the process of

lending to the poor have evolved over time from ROSCAs with average loan of US$2.00 to regulated MFBs with average loan of US$1,590. The native microfinance institutions which is an offshoot of ROSCA is characterized with high savings, group lending and informal mode of operation. The transition from ROSCA to modern microfinance bank witnessed different interventions by both private and public initiatives such as cooperative, NGOs, money lenders and government initiatives. Most private initiatives, especially, NGOs mainly depended on donor funding, operate group delivery methodology and are limited in outreach and women focused. Whereas, government initiatives such as Peoples Bank, Community Banking and FEAP are pro-poor institutions and often loss their focus, because of poor governance, lack of requisite manpower, under-capitalization, lack local community involvement and political interference, amongst others. The review of legal and regulatory framework of microfinance bank shows that there was no regulatory and supervisory framework prior 2005. However, the framework released by the CBN in 2005 which was subsequently reviewed in 2012 clearly specified the objectives, ownership structure, capital requirements and other prudential guidelines for microfinance banks in Nigeria.

The analysis of microfinance banks reveals that national MFBs had the highest average loan size with lowest portfolio-at-risk, while unit MFBs which had the lowest average loan size was associated with highest portfolio-at-risk. Also, the analysis reveals that most MFBs initially preferred individual lending model but of recent the trend had change in favour of group lending methodology. Sectoral allocation of loans show that MFBs

prefer lending to trade and commerce subsector at the expense of other sectors such as agriculture and forestry that employ greater percentage of the poor because of quick promising returns of trade and commerce subsector.

Chapter 4

Data, Methodology and Results

4.1 Introduction

This section focuses on the methodology. The first part discusses the sources of data; the second section deals with variables description. The third section presents and explains the summary statistics while the last part discusses the adopted methodology and the research hypotheses for the thesis. The last section presents the results of various regression analysis.

4.2 Sources of Data

Data on the Nigerian microfinance institutions can be obtained from different sources each with advantages and disadvantages. Data on Nigerian MFIs is available in a non-governmental organization, Microfinance Information Exchange (the MIX). The MIX collects data on microfinance institutions and enhances dissemination of information on the industry. However, Microfinance Information Exchange data only capture a few microfinance institutions which are not representative of the microfinance industry in Nigeria. This study employed a more detailed panel data on 752 microfinance banks (MFBs) collected by the Central Bank of Nigeria (CBN). The CBN is the regulatory authority charged with the responsibility of regulating microfinance institutions in Nigeria. The revised microfinance regulatory framework for Nigeria mandated MFBs to submit monthly statements of liabilities and assets, income statement and other memorandum items electronically (FinA Off-Site Surveillance System) to the Central Bank of Nigeria. Majority of the registered MFBs have fully complied

with the CBN directive. Therefore, the data set used for this study only covers useable MFBs' data that are available with the CBN.

The CBN data is considered more appropriate because it covers wide range of information on assets and liabilities, income and other relevant information on MFBs in Nigeria. The study used 2011- 2014 MFBs returns to CBN which cover 752 microfinance banks. The MFBs dataset for 2014 has the highest rate of returns from MFBs compared with other periods. The dataset allows an in-depth evaluation of MFBs' performance in Nigeria using panel data methodology.

4.3 Variables Description

The name of variables use for the study and its measurements are presented in the table 4.1 below:

Table 4.1: Variables Description

Variable Name	Measurement	Source
Sustainability (OPSS)	(Total financial revenues)/ (financial expenses + loan loss provision + operating expenses)	Central Bank of Nigeria Data Base
Loan	Is the total amount of loans outstanding	Central Bank of Nigeria Data Base
Labour Cost (LABCOST)	Personnel expenses/Total assets	Central Bank of Nigeria Data Base
Efficiency (EFF)	(Personnel and administrative expenses)/Period average of gross loan portfolio	Central Bank of Nigeria Data Base
Scale	Log of total assets	Central Bank of Nigeria Data Base
Average Loan Size (AVLOAN)	(Total loan portfolio, end period/total number of outstanding loans, end of period)	Central Bank of Nigeria Data Base
Yield	Yield on gross loan portfolio (Cash Financial revenue from loan portfolio/Average gross loan portfolio)	Central Bank of Nigeria Data Base
Gender	Percentage of women borrowers	Central Bank of Nigeria Data Base
Portfolio at Risk (PAR)	Non-performing loan (Sum of pass& watch, sub-standard, and doubtful)	Central Bank of Nigeria Data Base
Provision Expense Rate	Is the loss loan provision as percentage of the total loan portfolio	Central Bank of Nigeria Data Base
Write-off Rate	Is the portion of the total loan portfolio that has been written off and accepted as a loss	Central Bank of Nigeria Data Base

4.4 Summary Statistics

The summary statistics results in table 4.2 shows that the mean assets (SCALE) of MFBs worth US$2.27 million and the maximum assets of about US$262.58 million. Further analysis from table 4.3 shows that microfinance banks are divergent in size. For example, national MFBs has the largest size, on average, of about US$66.76 million followed by state MFBs of about US$5.62 million and unit MFBs of about US$1.28 million. The national, unit and state MFBs has maximum assets of US$216.16 million, US$87.10 million and US$262.57 million, respectively, showing divergence of sizes of MFBs within the industry. The dichotomy in the sizes of MFBs in Nigerian is a reflection categorization of microfinance banks into national, state and unit with different capital base. The national MFBs are allowed to open branches and operate in all the states within the federation, while a state MFBs can operate within a state and Federal Capital Territory (FCT) and a unit MFBs are confined to a particular location. The categorization of MFBs could be the reasons behind divergence in MFB sizes in Nigeria.

Measure of sustainability, operating self-sufficiency ratio (OPSS), the mean ratio of 0.56 in table 4.2 is an indication that, on average, MFBs as a whole in Nigeria could be said to be unsustainable, because the ratio is below 1.00. Further analysis from table 4.3 also shows that means of the operating self-sufficiency ratio (OPSS) of the three categories of MFBs are unsustainable. It indicates 0.33, 0.58 and 0.56 for national, state and unit MFBs, respectively, showing that, on the average, state microfinance banks are better off compared with the remaining two categories of MFBs. In term of the spread within each category of MFB, the unit MFBs has the highest

standard deviation of 0.73 ratio compared with the standard deviation of 0.44 and 0.31 for state and national MFBs, respectively. This implies that though unit MFBs is less sustainable, it has the highest spread .The average loan size per borrower for the industry as a whole is estimated US$1,590 but the average loan size differs when considering each category of MFB (Table 4.2 and 4.3). For example, the average loan size of state MFBs and unit MFBs are comparable, indicating US$1,860 for the state MFBs and US$1,500 for the unit MFBs. The national MFBs has the highest average loan size of about US$2,460 per borrower.

Table 4.2: Descriptive Statistics

Variable Name	Definition of Variable	Mean	Minimum	Maximum
OPSS	Financial Sustainability	0.56	-0.96	22.00
AVLOAN	Average loan balance per borrower	1.59	0.001	47.15
LOAN	Total Loan Size	1,190	0.83	234,603
LABCOST	Labour Cost	0.57	0	6.6
EFF	Efficiency	0.35	0	20.28
SCALE	Total assets	2,269	8.97	262,577
LOASS	Loans to Assets Ratio	0.51	-0.003	19.75
PAR	Port-folio at Risk	0.26	-0.16	6.92
GENDER	Percentage of women borrowers	0.45	0	1
YIELD	Yield on gross loan portfolio	0.31	-0.35	20.31
WRFR	Write-off rate	0.09	-0.30	3.62
PROBAD	Provision expense rate	0.09	-0.24	26.30

Source: Central Bank of Nigeria's FinA Off-Site Surveillance System, data base. The values of AVLOAN, LOAN and SCALE are in US$'000

The data for female clients from table 4.2 shows that, on average, female clients constitute 45 per cent of total active borrowers indicating that microfinance banks in Nigeria lend more to male clients than female clients. The analysis also shows that some microfinance banks wholly focus on women while some other cases on male clients. Further analysis from table 4.3 shows that the percentage of women borrowers suggests that national MFBs lend more to women than state and unit MFBs. On the average, national MFBs lend 62 per cent of its loans to women, while state and unit MFBs lend 49 and 47 per cent of their loans to women, respectively. The pattern of MFBs lending to women clients as indicated by the minimum ratio of zero (0) and maximum of one (1) especially for unit MFBs, implies that in some MFBs lend 100 per cent of their loans to women clients while some other MFBs lend 100 per cent of their loans to male clients.

Table 4.3: Summary Statistics

	State MFBs				Unit MFBs				National MFBs			
Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
OPSS	0.58	0.44	0.04	2.66	0.56	0.73	-0.96	22.00	0.33	0.31	0.03	1.19
GENDER	0.49	0.19	0.02	1	0.47	0.20	0	1	0.62	0.25	0.26	1
AVLOAN	1.86	3.16	0.02	23.45	1.50	3.18	0.001	47.15	2.46	3.83	0.23	14.10
PAR	0.15	0.19	0	0.99	0.28	0.41	-0.16	6.92	0.05	0.09	0.001	0.30
LABCOST	0.04	0.03	0.003	0.33	0.06	0.18	0	6.6	0.04	0.03	0.01	0.08
LOASS	0.50	0.26	0.03	2.06	0.50	0.70	0.003	19.75	0.51	0.35	0.03	0.90
EFF	0.19	0.19	0.02	1.81	0.37	1.14	0	20.28	0.19	0.11	0.04	0.49
YIELD	0.27	0.26	0.02	2	0.31	0.79	-0.35	20.31	0.47	0.58	0.11	1.99
PROBAD	0.02	0.04	-0.10	0.36	0.11	0.86	-0.24	26.30	0.01	0.01	-0.001	0.03
WRFR	0.004	0.01	-0.01	0.04	0.11	0.40	-0.30	3.62	0.002	0.002	0.001	0.004
LOAN	2797.99	5342.82	33.38	65485.26	659.18	6377.91	0.83	234602.54	39326.98	49141.88	484.53	183104.42
SCALE	5624.60	7942.80	209.29	87101.76	1280.88	8885.09	8.97	262576.83	66756.82	48630.86	2433.88	216164.94

Source: *Author's calculation based on the data from the Central Bank of Nigeria. The values of Outreach, Loan and Size are in US$'000*

Analysing the repayment variables, on average, portfolio at risk is 0.26, which implies that 26 per cent of the total loan portfolio is more overdue. Also, a kin look shows high disparity of portfolio at risk in the industry as some as high as 99 per cent while other have very low portfolio at risk. From table 4.3, the risk profile of the three categories of MFBs differ, on the average, unit MFBs has 28 per cent portfolio at risk, while state and national have risks of about 2 and 1 per cent, respectively. This implies that unit MFBs has the highest exposure to risk; whereas, the national MFBs recorded the lowest risk profile of about 1 per cent. The standard deviation of portfolio at risks for the three categories of MFBs still show that unit MFBs recorded the highest spread of about 41 per cent whereas state and national MFBs has 19 and 9 per cent, respectively. The risk profile of microfinance institutions is also divergent as reflected in maximum and minimum portfolio at risk (PAR) of 6.9 and -0.2 for unit MFBs, 0.99 and 0 for state and 0.30 and 0.001 for national MFBs. This implies some microfinance institutions have zero portfolios at risk while some have high risk profile or exposure. However, the loans to assets ratio (LOASS) which is a measure of orientation and indicator of business practices indicated that, on the average, national, unit and state MFBs has the ratio of 0.51, 0.50 and 0.50, respectively. Indicating that although national MFBs has the lowest risk profile, it business practices is poor. The write-off rate and provision expense rate, on average, is both 9 per cent. Further analysis shows that write-off rate and provision expense rate are less than 1 per for both state and national MFBs, whereas, unit MFBs is as high as 11 per cent for both.

From table 4.3, it seems there are no more differences in MFBs labour cost for each category of MFBs. For example, average labour costs for state and national MFBs are the same at 4 per cent while that of unit MFBs is 6 per cent. The average interest rate for the whole industry is about 31 per cent, but further analysis shows that average the interest rate charged by national MFBs is around 47 per cent with spread of about 0.58 which indicates divergent within the group. The unit and state MFBs averaged 31 and 27 per cent with standard deviations of 0.795 and 0.26, respectively.

4.5 Methodology

The thesis employs one-way error component panel data regression model which takes the general form:

$$y_{it} = \beta X_{it} + \delta Z_i + u_i + \varepsilon_{it} \quad i = 1,.....N; \quad t = 1,.....T \quad .....(4.1)$$

where y_{it} is the dependent variable with subscript i representing individual microfinance bank and cross-section aspect of the model. The subscript t denoting time and represents time series dimension of the model. β is $(K \times 1)$ vector of coefficients on X_{it} and X_{it} is a $(1 \times K)$ vector of observed microfinance bank-specific characteristics that vary over time and individual MFBs. However, Z_i is a $(1 \times p)$ vector of time-invariant variables that do not vary with time but vary only over individual MFBs, while δ represents $(p \times 1)$ vector of coefficients on Z_i. u_{it} is the error term which is composed into two parts $u_{it} = \mu_i + v_{it}$, μ_i is the unobserved MFI-specific effect, It captures unobserved heterogeneity commonly associated with cross sectional MFIs, while v_{it} is the idiosyncratic error, it accounts for other factors that affect the

dependent variable that are not included in the model. This is a one-way error component regression model where $\mu_i \sim IIN(0, \sigma_\mu^2)$ and independent of $v_i \sim IIN(0, \sigma_v^2)$.

Borrowing from the literature, two panel data models usually are estimated namely, fixed effects model (FE) and random effects model (RE). The FE estimator employs the orthogonality assumption whereby the regressors are uncorrelated with the idiosyncratic error $Cov(X_{it} v_{it}) = 0$ and $Cov(Z_i v_{it}) = 0$. The fixed effects method simply transformed variables by removing averages of individual MFB from the annual observation, by this, individual MFB heterogeneity is removed i.e. the fixed effects together with the intercept are removed (Mersland and Strom, 2010). It implies that all higher level of variance is removed from the model living out lower level of variance which makes more realistic the assumption of exogeneity (Allison, 2009). The strengths of using FE model are because it controls higher level of variance and avoiding correlation. It equally allows the coefficient estimates for the covariate(s) to be estimated with time variant part, but the basic weakness is that it cannot accommodate time invariant variables (Bell and Jones, 2012). The RE estimator assumes higher and additional orthogonality conditions that the regressors are not related or uncorrelated with the individual-specific error. The RE estimator assumed that fixed effects error is included in the error term (Mersland and Strom, 2010). The RE model assumes that the individual-specific effects such that $Cov(X_{it,} u_i) = 0$ and $Cov(Z_{i,} u_i) = 0$, the estimator allows the use of dummy variables or the time-constant variables subject to some restrictive

assumptions. We have random effects when the individual-specific effects μ_i are uncorrelated with the independent variables in X_{it} and Z_i i.e. if μ_i form part of u_{it} or if μ_i does not influence the regressors. The orthogonality assumption implies that the parameters of the RE can be estimated by ordinary least square (OLS) or between estimator, but not necessarily implies efficient estimators. Thus, if we assume that $Cov(X_{it,}u_i) = 0$ holds, the RE estimator becomes more appropriate. However, if the assumption breaks down such that exogeneity assumption does not holds $Cov(X_{it,}u_i) \neq 0$, the RE estimator becomes biased.

To choose for the appropriate model between fixed effects model and random-effect model, the additional orthogonality assumptions of over-identifying restrictions of the random effects is tested using Hausman fixed-vs-random effects test under conditional homoskedasticity. Rejection of additional orthogonality assumptions of the random-effects model implies that the fixed effect model is preferred (Baltagi, 2005).

The choice of panel data methodology is predicated on the grounds that it addresses associated problems with static cross sectional and ordinary regression analysis by accounting for changes in the data. It takes care of problems of unobserved heterogeneity commonly associated with cross sectional studies and accounts for idiosyncratic error. These problems are time-constant factors and time-varying error that affect the dependent variable (Wooldridge, 2006).

4.6 The Hypotheses

This thesis uses Nigeria as a case study to examine drivers of sustainability indicator namely operating self-sufficiency and to test for the role of interest rate in microfinance banks' sustainability in Nigeria. The objective is test whether the replica of findings from cross sectional studies that involve multiple countries can be obtained on a single country, Nigeria.

The first part of the hypothesis aims to explain sustainability with a series of variables including interest rate, capital cost, efficiency, loan to assets ratio, gender, with particular emphases on interest rate. The hypothesis tests relationship between MFBs' sustainability with a series of variables with special emphasis on interest rate. For example, proponents of MFBs sustainability argued that sufficient income should be generated by MFBs to remain in business by raising interest rate. They based argument on the following reasons that increase in interest rates would amongst others, not reduce demand for loan as the poor are more concerned about accessing loans, could lead to higher profitability and reduce dependency on donations (Christen et al. 1995, Rhyne 1998 and Rosenberg 2002). On the other hand, others believed that the borrowing costs needed to be subsidized because the poor borrowers could not afford to bear full costs of loans (Christen 1997). In view of the divergence views the hypothesis seeks to examine the relationship between sustainability and interest rates. It further examine the impact of high interest rates on repayment rate, this would shed light on whether interest rate is detrimental to MFBs' sustainability or not.

The second hypothesis focused on a major debate in the literature 'mission drift', the main argument of socially-driven microfinance banks is that commercialization of microfinance leads to mission drift. The concern among the socially-driven MFBs is that increase in average loan size as result of pursuit of profit and cost-effective way of operation could shift focus from the poor borrowers to the wealthier borrowers that have capacity to absorb bigger loans and the same time compromise outreach to the poor that have much better guarantee of repayment.

Lastly, the third hypothesis seeks to explain the likely effect of lending to women on the repayment rate. There is general view that because women are better managers than men, they tend to have higher repayment of micro loans than their male counterpart. This assertion will be put to empirical scrutiny to ascertain what could be obtainable in Nigeria.

4.7 Model Specification (Drivers of Sustainability)

Putting into consideration the empirical framework of one-way error component of panel data in equation (4.1), the study utilized the panel dataset of 752 microfinance institutions in Nigeria during 2011-2014 to examine drivers of sustainability in Nigeria. In specifying the model, we leverage on past studies that examined drivers of microfinance sustainability, such studies included Cull et al. (2007), Ayayi and Sene (2010), Nadiya (2012), Rahman and Mazlan (2014). These studies used different variables such as size of MFIs, yield on gross loan portfolio, personnel productivity ratio, average loan balance per borrower, cost per borrower, age of MFIs, operating expense ratio, debt to equity ratio, number of active borrowers, labour cost, portfolio-at-risk, number of loan per staff

member, number of women borrowers and efficiency ratio, orientation, to explain dependent variables such as operational self-sufficiency ratio and financial self-sufficiency ratio. This thesis will use some of these variables, depending on data availability, to examine drivers of operating self-sufficiency in Nigeria. The majority of studies conducted on developing countries on this issue are either ordinary least square (OLS) or cross-sectional regression. OLS and Cross sectional regression fail to account for individual heterogeneity of microfinance for each individual country and cross-section dependence. Failure of cross section and regression studies to control these, especially, for heterogeneity usually results to obtaining biased estimate and unreliable coefficients (Moulton 1986; Baltagi, 2005). In view of these major weaknesses, this thesis uses panel data. Panel data analysis has the advantage of controlling for heterogeneity which improves the reliability of estimates. It allows for more variability and information in data, less collinearity among variables and more efficient estimates (Baltagi, 2005). Subsequent study by Mersland and Strom (2010) tried to address these challenges by adopting a panel dataset of MFIs from 74 countries during 2001-2006. However, the study only focused on cross-country analysis.

In developing countries such as Nigeria, microfinance institutions provide dual functions of providing access to financial services (outreach) while at the same time striving to cover operating costs (sustainability). They also aim for profitability owing to the increased competition in the industry for donor funding. The thesis adopted study conducted by Cull et al. (2007) using measures of sustainability, operating self-sufficiency (OPSS) as

dependent variable, putting into consideration theoretical factors that drive them with special attention on interest rate, cost of labour and loan size. The models take the following form:

$$OPSS_{it} = \alpha + \sum \beta_j X_{it}^{j} + u_{it} \text{.....(4.2)}$$

$OPSS_{it}$ is the operating self-sufficiency ratio of i MFI at a time t. It represents the dependent variable and is derived by dividing total financial revenues by the sum of financial expenses, loan loss provision and operating expenses (Cull et al. 2007, Muller and Uhde, 2008). If the value is above one, it implies sustainability i.e. microfinance institution earns enough revenue to cover its total operating cost.(Arunachalam, 2006, Cull et al. 2007, Muller and Uhde, 2008), but if the value is below one, it is an indication the MFB depletes its capital base to provide services to clients which could jeopardize long-term sustainability of the institution (Ehigiamusoe, 2011). Drawing from past studies, especially, Cull et al (2007), we use operating self-sufficiency as a proxy for sustainability of microfinance institutions, where α is the constant of the regression model and X_{it}^{j} is vector of MFB-specific characteristics (j) of MFB i in Nigeria which included yield, a proxy for interest rate, labour cost, loan to assets ratio, a proxy for orientation, loan size, efficiency and gender at time t. Following Cull et al. (2007), equation below is specified, such that:

$$OPss_{it} = \alpha + \alpha_1 yield_{it} + \alpha_2 yield_{it} \times LendingType_{it} + \alpha_3 LabCost_{it} + \alpha_4 LabCost_{it} \times LendingType_{it} + \alpha_5 Loass_{it} + \alpha_6 Loan_{it} + \alpha_7 Gender_{it} + \alpha_8 Eff_{it} + u_{it} \text{.....(4.3)}$$

$yield_{it}$ stands for the interest rate charged by the lender of i MFB at a time t while α_1 represents its coefficient, it shows the effect of interest rate on operational self-sufficiency. α_2 is the coefficient of matrix of interest rate varied by lending types which include individual and group lending methodologies. It is expected that increase in interest rate should have positive effect on operational self-sufficiency (Cull et al. 2007), but the interactive term test for whether this impact varies by lending type. $LabCost_{it}$ is the labour cost of i MFI at a time t, and is defined as the ratio of personnel expenses to total assets (Cull et al. 2007), α_3 shows the effect of labour cost on the operational self-sufficiency, the effect of matrix of labour cost varies by lending types is represented by α_4. A prior expectation is that high labour cost will exact negative influence on operational self-sufficiency. Also, $Loass_{it}$ is a measure of orientation, it is loans to assets ratio of i MFI at a time t, it measures business practices of microfinance institutions (Cull et al. 2007). The higher the ratio, the more risky is the microfinance institutions to higher defaults, it also an indication of low liquidity. This implies negative relationship with operational self-sufficiency. $Loan$ is the total loan size of i MFI at a time t, it is expected that a rise in loan size will improve sustainability.

Other independent variables included measures of Eff and $Gender$. Eff is measured as the ratio of non-financial expenses (personnel and administrative expense) to period-average gross loan portfolio (Yaron and Manos, 2006). It is expected that an improvement in the efficiency will be positively related to the dependent variable or improvement in sustainability.

To measure the effect of gender on operational self-sufficiency, the ratio of female borrowers to the total borrowers is used as a proxy for $Gender$. In some countries female borrowers have better repayment records so it is expected that the ratio will be positively related with operational self-sufficiency. Dynamism is introduced into the equation in the form of a squared valued if at high rates of interest it is riskier borrowers who take out loans then overall profitability will fall. The quadratic form of yield is therefore introduced into the model across various lending types to examine it effect on sustainability (Cull et al. 2007).

A further analysis is conducted to shed more light on the relationship between yield and portfolio at risk Par to shed light on whether risk is associated with high interest rate, Cull et al. (2007) tested the impact of yield and yield-squared with other control variables on the portfolio-at-risk, as the dependent variable. This thesis also introduced dynamism into the equation in the form of a squared valued if high interest rates could lead to increase in loans delinquency in Nigeria, and the equation is also varied with lending types. Thus, the model is specified below:

$$Par_{it} = \alpha + \alpha_1 Yield_{it} + \alpha_2 Yield_{it} \times LendingType_{it} + \alpha_3 Yield\,\hat{}\,2_{it} + \alpha_4 Yield \times LendingType_{ity} + u_{it\,i} \quad \text{.... (4.4)}$$

The dependent variable is portfolio-at-risk, Par , it is an indication of loan delinquency and it is measured by the sum of pass watch, sub-standard and doubtful loans. The higher the interest rate or yield, the higher the portfolio-at-risk and by implication, the lower the repayment rate, therefore a prior expectation is that yield-squared would be positively related with portfolio-at-risk (Cull et al. 2007).

4.8 Model Specification (Mission Drift)

In specifying model for mission drift, we follow the method adopted by Cull et al. (2007) average loan size (AVLOAN) as the dependent variable was explained with other relevant explanatory variables such as sustainability proxy by operating self-sufficiency (OPSS), interest rate proxy by yield (YIELD), labour cost (LABCOST), a measure of efficiency (EFF) and orientation proxy by loans to assets ratio (LOASS) as independent variables. To test the effect of lending types which included individual and group lending models on the equations, same point re interaction term made earlier applies here, especially on sustainability indicator and labour cost, such that:

$$AVLOAN_{it} = \alpha + \alpha_1 OPSS_{it} + \alpha_2 OPSS_{it} \times LendingType_{it} + \alpha_3 LabCost_{it} + \alpha_4 LabCost_{it} \times LendingType_{it} + \alpha_5 Loass_{it} + \alpha_6 Scale_{it} + \alpha_7 Eff_{it} + u_{it} \quad \ldots.(4.5)$$

where $AVLOAN$ is the average loan size and also the dependent variable in the specified model above. It is measured by dividing total loan portfolio, end of period by total number of outstanding loans, end of period (UNCDF, 2002). There is general consensus that poor always demand for smaller loans, thus, variations in such loan always reflect poverty condition of the poor. Therefore, a decrease in average loan size is synonymous with the increase in the depth of lending to the poor; on the other hand, a rise in loan size is seen as deviating resources from the poor (Mosley, 1996; Armendariz and Szafarz, 2009). It implies that a reduction in average loan size is associated with the increase in the depth of lending to the poor, while increase in loan size is seen as deviating resources from the poor. The $OPSS$ is operating self-sufficiency, Therefore, the a prior expectation is that

the coefficient of operating self-sufficiency (OPSS) ratio to be positively related with average loan size for mission drift to exist (Cull et al. 2007; Muller and Uhde, 2008; Freixas and Rochet 2008; Mersland and Strom 2010; Abrar and Javaid 2014).

$SCALE$ is the size of MFBs measured by total assets and is expected to have positive relationship (Abrar and Javaid 2014). Moreover, $LABCOST$ is the labour cost, an increase in labour cost is expected to be negatively related with the dependent variable. EFF represents microfinance banks' efficiency and would be negative if MFBs are less efficient while positive coefficient implies the reverse. More also, $LOASS$ is a measure of orientation; the higher ratio implies that the more at risk is the MFB to higher defaults. In the second set of panel models for mission drift, to test for the impact of gender we use the percentage of active women borrowers to total borrowers as the dependent variable with other control independent variables earlier explained above (Cull et al. 2007; Mersland and Strom 2010). The a prior expectation is that the coefficients of sustainability $(OPSS)$ would be negatively related with the dependent variable $(GENDER)$, (i.e. percentage of lending to women) for mission drift to exist, while positive coefficient implies shift to larger better off borrower (Freixas and Rochet 2008; Mersland and Strom 2010).

$$GENDER_{it} = \alpha + \alpha_1 OPSS_{it} + \alpha_2 OPSS_{it} \times LendingType_{it} + \alpha_3 LabCost_{it} + \alpha_4 LabCost_{it} \times LendingType_{it} + \alpha_5 Loass_{it} + \alpha_6 Scale_{it} + \alpha_7 Eff_{it} + u_{it} \quad \text{.....(4.6)}$$

4.9 Model Specification (Women Outreach and Repayment)

To examine impact of female clients on repayment, we adopt D'espallier et al. (2011) which model of the impact proportion of female clients on

repayment variables, namely portfolio at risk and provision expense rate.. To ensure robust of the model estimation, kin attention is also paid to other important variables that affect the repayment aside percentage of female clients are included as control variables in the model (D'espallier et al. 2011). Thus the first equation is specified as follow:

$$PAR_{it} = \alpha + \alpha_1 GENDER_{it} + \alpha_2 Z_{it} + u_{it} \quad \text{..... (4.7)}$$

where PAR_{it} is the portfolio at risk for MFB i in year t and $GENDER_{it}$ is the proportion of female clients. Z_{it} is a matrix of MFB-specific control variables such as operating self-sufficiency, yield, labour cost, orientation, scale and efficiency. Also, two variables in the model, namely yield and labour cost were varied by the individual and solidarity lending types. u_{it} is the error term, it is sub- divided into two, such that $u_{it} = \mu_i + v_{it}$, the μ_i is the unobserved MFB-specific effect (D'espallier et al. 2011). Thus equation (6.6) can be written as follows:

$$PAR_{it} = \alpha + \alpha_1 OPSS_{it} + \alpha_2 Yield_{it} + Yield_{it} \times LendingType_{it} + \alpha_3 LabCost_{it} + \alpha_4 LabCost_{it} \times LendingType_{it} + \alpha_5 Loass_{it} + \alpha_6 Scale_{it} + \alpha_7 Eff_{it} + u_{it} \quad \text{…(4.8)}$$

where the $OPSS$ is operating self-sufficiency, It is an indicator of sustainability, and the expectation is that a more sustainable microfinance banks would be associated with a reduced portfolio at risk and that implies high repayment rate. $LABCOST$ is the labour cost, in most developing countries labour cost of most microfinance institutions is high and that implies that high labour cost is expected to be associated with high portfolio at risk.

For EFF variable, a prior expectation is that the coefficient of ratio would be positive if MFBs lend more to women clients while negative coefficient is expected if lending to women clients reduce. More also, $LOASS$ is measured by the ratio of total loans to total assets. The higher ratio implies that the more risky is the MFBs to higher defaults; therefore, it is expected to have negative impact on women outreach. PAR is the portfolio at risk, in this case, It is a proxy for repayment rate, higher portfolio at risk ratio implies low repayment rate while the reverse implies improvement in repayment. A prior expectation is that increase lending to women clients is expected to be negatively related with portfolio at risk, which also implies increased repayment (D'espallier et al. 2011).

4.10 Analysis and Presentation of Results

4.10.1 Correlation Coefficients

Correlation coefficient shows the strength of relationship between two variables. Generally, the results of the correlation coefficients show that some of the variables of interest are significant at 5 per cent, however the strength of relationship in most cases are weak. This is also an indication that subsequent regression on the data might not suffer from the problem of multicollinearity.

The correlation coefficients in table 4.4 suggest that four variables are significantly associated with sustainability (OPSS) namely labour cost (LABCOST), efficiency (EFF), orientation (LOASS) and size of MFBs (SCALE) at 5 per cent significant level. The coefficient of EFF in relation to OPSS is expected to be positive, but -0.1 is contrary to expectation,

suggesting that management skills of most MFBs as presently constituted is inefficient. The coefficient of size of MFBs (SCALE) is significantly and positively correlated with sustainability in line with a prior expectations, while -0.1 coefficient for GENDER is negative and significant, contrary to expectation.

Using average loan size (AVLOAN) as a proxy for outreach of microfinance banks, the correlation coefficient between average loan and sustainability (OPSS) is 0.02 and not significant. Even though the coefficient is positive but since is not significant it cannot be concluded there is evidence of mission drift. Judging from the correlation coefficients of these two indicators with average loan size, we cannot affirm the presence of mission drift in Nigeria's microfinance banks. The results further indicate that five variables are associated with outreach of MFBs in Nigeria; labour cost, loan-assets ratio, efficiency, interest rate (YIELD), gender and size of MFBs.

Using another measure of outreach i.e. ratio of women clients to total active borrowers (GENDER), the result in table 4.4 still suggests that the claim of mission drift cannot be ascertained. The coefficient of women borrowers (GENDER) and sustainability (OPSS) is negative (-0.1) and significant, it suggests that commercialization of MFBs might reduce lending to women clients.

Table 4.4: Correlation Coefficient

	GENDER	OPSS	LABCOST	LOASS	EFF	YIELD	AVLOAN	SCALE
GENDER	1							
OPSS	-0.13*	1						
LABCOST	0.01	-0.08*	1					
LOASS	0.01	-0.07*	0.08*	1				
EFF	-0.01	-0.06*	0.46*	-0.10*	1			
YIELD	-0.004	-0.001	0.15*	-0.10*	0.70*	1		
AVLOAN	-0.12*	0.02	-0.06*	0.08*	-0.09*	-0.08*	1	
SCALE	0.04	0.10*	-0.15*	-0.09*	-0.18*	-0.05*	0.18*	1

***Source**: Author's own calculations from the CBN data. Coefficients are statistically significant at 5% (*p<0.05)*

Other factors that could drive interest rate include labour cost, ratio of loan to asset and level of managerial efficiency. The positive (0.2) correlation coefficient of labour cost in relation with interest rate possibly suggest high per unit cost of labour might account for high interest rate of MFBs due to the high cost per loan of servicing small loans. The negative coefficient of the ratio of loan to asset suggests restrictions on loans limit the supply of credit and push up interest rates and an expansion of loan/capitals reduces rates.

4.10.2 Sustainability Regression Results

To test for the factors that drive microfinance sustainability in Nigeria, we focus mainly on the role of yield, which is a proxy for interest rate using operational self-sufficiency ratio (OPSS) as a measure of sustainability. For this measure, fixed effect and random effect panel data equations were estimated as indicated in column 1 and 2, in table 4.5. Equation in column (1) was chosen and interpreted based on the Hausman test out of the two equations. The results of operational self-sufficiency as indicated in column (1) shows that all variables included in the model significantly explained

microfinance sustainability in Nigeria. These variables include the interest rate (YIELD), labour costs, gender, loan to asset ratio, efficiency ratio and loan size. The coefficient of interest rate was positive and conforms to a prior expectation, as 1 per cent increases in interest rate elicits 0.6 per cent changes in sustainability of microfinance banks in Nigeria. It implies that the higher the interest rate, the higher the profit accrued to MFBs. This result corroborates that of Cull et al. (2007) who find that yield is positively related to all measures of microfinance sustainability. The coefficients of other independent variables are rightly signed except gender which was negative (-0.4) contrary to expectation. The coefficient of labour to asset ratio is negatively related with operational self-sufficiency ratio as expected. The result also confirms negative coefficient (-0.7) of labour cost on operational self-sufficiency by Cull et al. (2007). This result implies that 1 per cent increase in labour cost of MFBs in Nigeria could reduce microfinance sustainability by 0.3 per cent. The coefficient of the size of loan is also significant with the expected positive sign; this shows that 1 per cent increase in loan size will improve sustainability of microfinance banks by 0.3 per cent. The coefficient of loan to asset ratio (LOASS) is negative as expected, lower ratio means improvement in business practices (Cull et al. 2007), the coefficient -0.1 implies 1 per cent reduction in microfinance the ratio would translate to about 0.1 per cent improvement in microfinance sustainability.

Table 4.5: Sustainability Regression

	Fixed Effect	Random Effect
	Operational Self-Sufficiency	**Operational Self-Sufficiency**
	1	2
Yield	0.62***	0.06***
	(2.77)	(2.81)
Gender	-0.39***	-0.39***
	(-6.69)	(-6.62)
Labour costs to Assets (LABCOST)	-0.13*	-0.13*
	(-1.86)	(-1.80)
Loan to Assets (LOASS)	-0.06***	-0.06***
	(-3.77)	(-3.84)
log of Loan (LLOAN)	0.27***	0.03***
	(2.72)	(-2.63)
Efficiency Indicator (EFF)	-0.04**	-0.04**
	(-2.35)	(-2.32)
Constant	0.46***	0.47***
	(4.16)	(4.27)

*( ) t-Statistic, *** significant at 1%, ** significant at 5%, * significant at 10%*
The Hausman test (1&2) shows Chi2(8)=-2.20, with the Prob>Chi2=0.0361, When P-value is insignificant i.e. Prob>chi2 larger than 0.05, random effects is chosen but when it is not significant fixed effect is selected. Based on Hausman test, Fixed effect in column 1 is chosen for this analysis.

Source: Author's calculations, based on data from the CBN.

Borrowing from Cull et al. (2007), we allow interaction between gross portfolio yield, labour cost, and two lending models of microfinance, namely, individual and group lending models. The data series on the amount that each MFB lend under group and individual methodologies were generated separately and are allowed to interact with the gross portfolio yield and labour cost and their effects on sustainability measure. Based on the Hausman test, equation in column 4 of table 4.6 was analysed, the result from the model indicated that individual lending interest rate was significant in explaining sustainability in Nigeria. The result confirms earlier findings from Cull et al. (2007) findings that individual lending model is significantly

important and positively related to sustainability measures. An increase in individual lending interest rate elicits 0.1 per cent impact on sustainability of MFBs while the coefficient of 0.03 of group lending interest rate was not significant in explaining sustainability. This shows that interest rate is associated with improved sustainability for individual-based lenders.

In addition, labour cost is allowed to interact with the various lending models namely individual and solidarity lending models (Cull et al. 2007). The results show that interaction of labour cost with individual and group lending model were significant in explaining sustainability but both lending models were negatively related with sustainability as expected. It implies that increases in labour costs are associated with reduction in sustainability for both individual-based and group-based lenders.. Other significant factors that drive sustainability included percentage of women clients (GENDER), and efficiency (EFF). The GENDER has coefficients of -0.3 contrary to a prior expectation, and, the coefficient of -0.4 of efficiency was according to expectation.

Table 4.6: Sustainability Regression By Lending Models

	Fixed Effect	Random Effect
	Operational Self-Sufficiency	**Operational Self-Sufficiency**
	3	4
Yield	-0.12	-0.13
	(-0.58)	(-0.64)
Yield x Individual Lending Model	0.06***	0.06***
	(3.80)	(3.85)
Yield x Group Lending Model	0.03	0.03
	(1.39)	(1.45)
LabCost	3.92***	4.00***
	(3.35)	(3.43)
LabCost x Individual Lending Model	-0.25**	-0.27**
	(-2.42)	(-2.54)
LabCost x Group Lending Model	-0.37***	-0.36***
	(-3.41)	(-3.38)
Log of Loan	0.02	0.01
	(1.46)	(1.40)
Gender	-0.25***	-0.24***
	(-3.57)	(-3.50)
Loan to Assets (LOASS)	0.01	0.01
	(0.91)	(0.88)
Efficiency Indicator (EFF)	-0.42***	-0.41***
	(-4.87)	(-4.84)
Constant	0.47***	0.47***
	(3.12)	(3.16)

*( ) t-Statistic, *** significant at 1%, ** significant at 5%, * significant at 10%*
The Hausman test (3&4) shows Chi2(10)=6.51, with the Prob>Chi2=0.7704, When P-value is insignificant i.e. Prob>chi2 larger than 0.05, random effects is chosen but when it is not significant fixed effect is selected. Based on Hausman test, Random effect in column 4 is chosen for this analysis.
Source: Author's calculations, based on data from the CBN.

In developing countries, it is believed that the costs of information asymmetry and lack of collateral by borrowers are generally reflected in higher interest rate by the lenders which invariably aggravates problem of adverse selection and moral hazard. There are arguments that high interest rates can aggravate sharp reduction in the demand for loans and lower loan

repayment by the borrowers which can result to fall in profitability of microfinance institutions (Cull et al. (2007); Armendariz and Morduch, 2010). In view of this, we extend the analysis to test further the implications of the agency theory i.e the effects of high interest rate on sustainability. To achieve this, the quadratic form of gross portfolio yield is introduced to the base model as specified in column (5) and (6) in table 4.7 (Cull et al. 2007). The Hausman fixed-random test favour fixed effect model in column 6, therefore analysis of the model is based on the equation in column 6. The results of the random effect model show that the coefficients of gross portfolio yield is positive on sustainability as earlier confirmed, however, 0.004 coefficient of squared interest rate is negative, and strongly significant. This implies that at relative high interest rate only riskier borrowers have access to loan, the result also corroborates earlier finding of -0.2 coefficient of yield-squared by Cull et al. (2007). This result also affirms the earlier finding of Robert (2013) which initially finds positive relationship between profits oriented MFIs and interest rate but inimical to profitability at high interest rate. By this result, it clearly shows that high interest rate is detrimental to microfinance sustainability in Nigeria, contrary to the popular opinion that the poor only concern about access to loans but not concern about interest rates by the promoters of commercialization (CGAP, 2004; Armendariz and Morduch, 2010).

Table 4.7: Sustainability Regression (Squared)

	Fixed Effect	Random Effect
	Operational Self-Sufficiency	**Operational Self-Sufficiency**
	5	6
Yield	0.12***	0.12***
	(2.80)	(2.97)
Yield^2	-0.004	-0.004*
	(-1.55)	(-1.72)
Gender	-0.39***	-0.39***
	(-6.69)	(-6.63)
Labcost	-0.15**	-0.15**
	(-2.11)	(-2.08)
Loan to Assets (LOASS)	-0.06***	-0.06***
	(-3.57)	(-3.63)
log of Loan (LLoan)	0.03***	0.03***
	(2.89)	(2.82)
Efficiency Indicator (EFF)	-0.04**	-0.04**
	(-2.39)	(-2.37)
Constant	0.43***	0.43***
	(3.78)	(3.84)

*( ) t-Statistic, *** significant at 1%, ** significant at 5%, * significant at 10%*
The Hausman test (5&6) shows Chi2(7)=6.80, with the Prob>Chi2=0.4503, When P-value is insignificant i.e. Prob>chi2 larger than 0.05, random effects is chosen but when it is not significant fixed effect is selected. Based on Hausman test, Random effect in column 6 is chosen for this analysis.

Source: Author's calculations, based on data from the CBN.

In the study conducted by Cull et al (2007), the effect of high interest rate was test on loan repayment using portfolio-at-risk as the dependent variable. In this thesis, we also examine the impact of high interest rate on loan repayment; it is generally believed that too high interest rate is capable of affecting loan repayment due to adverse selection and moral hazard on the part of the borrowers (Cull et al. (2007); Armendariz and Morduch, 2010). We therefore tested the impact of squared gross portfolio yield on the portfolio at risk. The result in column (8) from table 4.8 shows that gross portfolio yield is highly significant in explaining loan repayment as both the

coefficients of its linear and squared coefficient significantly affect portfolio at risk. This corroborates Cull et al. (2007) results on the same issue. It suggests, by this result, that high interest rate in Nigeria might translate to loans delinquency. However, when we allow gross portfolio yield and labour cost to interact with different lending models, the coefficients of both individual and group lending models were negative and significant in explaining changes on portfolio at risk. It implies that a unit increase in individual and group lending interest rate could increase portfolio at risk by 0.2 and 0.1 per cent, respectively. This is slightly different from Cull et al (2007), their results show that only interest rate that related with group lend that was significant in explaining portfolio-at-risk. Further analysis of the regression result indicates that labour cost and individual labour cost were not significant but only group labour cost was significant. An increase in group lending labour cost would increase PAR by 0. 2 per cent, also, the impact of coefficients of efficiency on portfolio-at-risk was significant at 0.4 per cent.

Table 4.8: Repayment (Portfolio at risk) Regression

	Fixed Effect	Random Effect
	Portfolio at risk (PAR)	**Portfolio at risk (PAR)**
	7	8
Yield	3.01***	2.99***
	(6.89)	(6.87)
Yield^2	-0.11***	-0.11***
	(-5.24)	(-5.20)
Yield x Individual Lending Model	-0.16****	-0.16***
	(-4.93)	(-4.90)
Yield x Group Lending Model	-0.13***	-0.13***
	(-4.57)	(-4.58)
Labour Cost	-1.68	-1.70
	(-1.43)	(-1.45)
Labour Cost x Individual Lending Model	0.12	0.12
	(1.14)	(1.15)
Labour Cost x Group Lending Model	0.20**	-0.20**
	(1.97)	(-1.93)
Log of Loan	-0.02	-0.2
	(-1.30)	(-1.27)
Gender	-0.08	-0.08
	(-1.22)	(-1.13)
Loan to Assets (LOASS)	0.03*	0.03*
	(1.82)	(1.86)
Efficiency Indicator (EFF)	-0.42***	-0.43***
	(4.50)	(-4.57)
Constant	0.42**	0.41**
	(2.57)	(2.53)

*( ) t-Statistic, *** significant at 1%, ** significant at 5%, * significant at 10%*
The Hausman test (7&8) shows Chi2(11)=0.93, with the Prob>Chi2=1.000, When P-value is insignificant i.e. Prob>chi2 larger than 0.05, random effects is chosen but when it is not significant fixed effect is selected. Based on Hausman test, Random effect in column 8 is chosen for this analysis.

Source: Author's calculations, based on data from the CBN.

4.10.3 Regression Results for Mission Drift

To test for mission drift in Nigeria, we borrow from Cull et al. (2007) and Mersland and Strom (2010) that tested impact of sustainability indicator on different outreach variables namely average loan size, percentage of

women borrowers and main market. However, in this thesis, the impact sustainability OPSS is tested against only two measures of outreach, namely, average loan size (AVLOAN) and ratio of women clients to total active borrowers (GENDER). Aside OPSS, other control variables were added to the model as independent variables (Cull et al. (2007). We further interact some of the independent variables with individual and group lending variables to know the extent to which lending models affect mission drift (Cull et al. (2007).

In the first mission drift model, average loan size (AVLOAN) was used as dependent variable vis-à-vis other independent variables interacted with lending model in column 9 and 11 of table 4.9. A prior expectation is that average loan size should be positively associated with the sustainability if there is increase in the depth of outreach of microfinance banks (Cull et al. 2009; Olivares-Polanco, 2005). Freixas and Rochet (2008) noted that average loan size rises with the profits per loan client. The models results are presented in table 4.9 below.

Table 4.9: Mission Drift Regressions

	FIXED EFFECT		RANDOM EFFECT	
	Average Loan Size (AVLOAN) (9)	Percentage of Women Borrowers (GENDER) (10)	Average Loan Size (AVLOAN) (11)	Percentage of Women Borrowers (GENDER) (12)
Operating Self-Sufficiency (OPSS)	-0.06***	-0.16	-0.06**	-0.15
	(-3.78)	(-1.52)	(-3.71)	(-1.46)
Yield	-0.18**	2.77***	-0.17**	2.74***
	(-2.00)	(4.55)	(-1.93)	(4.50)
Yield x Individual Lending Model	-0.02**	-0.07	-0.02**	-0.07
	(-2.33)	(-1.46)	(-2.25)	(-1.42)
Yield x Group Lending Model	0.03***	-0.30***	0.03***	-0.30***
	(3.03)	(-4.36)	(2.98)	(-4.34)
Labour Cost x Individual Lending Model	-0.06*	0.05	-0.07**	0.05
	(1.84)	(0.21)	(1.96)	(0.21)
Labour Cost x Group Lending Model	0.09**	0.09	0.09**	0.09
	(2.09)	(0.33)	(2.23)	(0.33)
Log of Scale (LSCALE)	0.02**	0.38***	0.02**	0.38***
	(2.33)	(7.89)	(2.33)	(7.80)
Efficiency (EFF)	0.95**	-0.77***	0.09**	-0.75***
	(2.41)	(-2.87)	(2.27)	(-2.80)
Constant	0.28***	0.32	0.28***	0.37
	(3.30)	(0.57)	(3.27)	(0.65)

*( ) t-Statistic, *** significant at 1%, ** significant at 5%, * significant at 10%*

The Hausman test (9&11) shows Chi2(8)=7.15, with the Prob>Chi2=0.5210, while for 10 & 12 shows Chi2(8)=91.29 and Prob>Chi2=0.0000 . When P-value is insignificant i.e. Prob>chi2 larger than 0.05, random effects is chosen but when is significant fixed effect is selected.

Based on Hausman test, Random effect models in column 11 & Fixed effect in column10 are chosen for this analysis

The results of the of Hausman test with chi2(8)=7.15 and probability value (Prob>chi2=0.5210) indicates that random effect model in column 11 of table 4.9 is more appropriate for this analysis. The result in column 11 shows that sustainability, OPSS, was significant and negatively related with the average loan size (AVLOAN). It shows that sustainable MFBs tend to be

more focused on the poor clients, which also implies increase in depth of MFBs outreach in Nigeria. The result conforms to Christen 2000; Navajas et al. 2000; Frank, 2008) that show negative coefficient of sustainability on average loan size and that increase in sustainability helps depth of outreach to the poor. This result has alley fear expressed by Yunus that clients who are better off could crowd out poorer customers in any microfinance credit scheme (Christen and Drake, 2002). Other factors that affect average loan size included interest rate of individual and group lending models, individual and group labour costs, MFBs scale and efficiency.

The second mission drift regression model was estimated using the percentage of women borrowers to total active clients of MFBs as shown in column 10 and 12 of table 6.6. The results of the of Hausman test with chi2(8)=91.29 and probability value (Prob>chi2=0.0000) indicates that fixed effect model in column 10 of table 4.9 is more appropriate for this analysis.

The result in table 6.6 column (10) shows that operating self-sufficiency ratio (OPSS) is negatively related with percentage of women borrowers but not significant. Based on the result, we cannot conclude that sustainable MFBs tend less to women clients. In case of Cull et al. (2007) result, the coefficient was rather positive and significant as expected. The result also shows that interest rate (Yield) of MFBs negatively related with lending to women. However, allowing interest rate to interact with lending models, the result indicates that interest rate of group-based lender is negatively related with GENDER. An increase in group-based interest rate would reduce lending to women by 0.3 per cent. This result also suggests that women clients of group-based MFBs are more sensitive to increase in interest rate than

having access to loans. The result further shows increasing MFBs' size seems to be associated with lending to women, as a unit increase in the size of MFBs would improve lending to women by 0.4 per cent.

4.10.4 Women Outreach and Repayment Regression Results

4.10.4.1 Correlation Coefficient

The correlation in table 4.10 shows the correlation between female clients and repayment variables, namely portfolio at risk, provision expenses rate and write of rate. The correlation of -0.05 between female clients and portfolio at risk is negative. The negative correlation is according to expectation and suggests that female borrowers tend to have better repayment rate. It also implies that microfinance banks that have higher proportion of female clients are associated with low portfolio-at-risk. However, the correlations of two other repayment variables, provision expense rate and write-off rate with the female clients are 0.06 and 0.03, respectively are not as expected.

Table 4.10: Correlation

	Female Clients	Portfolio at risk	Provision expense rate	Write-off rate
Female Clients	1			
Portfolio at risk	-0.05	1		
Provision expense rate	0.06	0.35	1	
Write-off rate	0.03	0.22	0.25	1

Note

4.10.4.2 Repayment Regression Results

This section of the thesis Adopted D'espallier et al. (2011) that tested impact of female clients' loans on three measures of repayment, namely, portfolio-

at-risk, write-off rate and provision expense rate. However, in this thesis, out of three repayment variables only two, namely, portfolio at risk and provision expense rate are used in the regression models while write-off rate was excluded because the few data points which could not be used for any meaningful estimation. We therefore use these two variables as the dependent variables in the models. The portfolio at risk models namely fixed effect and random effect models are in column (13) and (15) while that of provision expense rate models are in column (14) and (16) in table 4.11, respectively. Applying Hausman tests to choose the appropriate models, the test suggests random effect model in column (15) for the portfolio model and random effect model in column (16) for the provision expense rate model.

The result of the portfolio at risk model in column (15) shows that increased lending to female client has negative effect on the portfolio at risk. An increase in lending to female clients will reduce portfolio at risk by 0.1 per cent, it implies that lending to women would improve repayment rate. This finding corroborate the earlier finding of D'espallier et al. (2011) that found negative impact of gender on portfolio at risk i.e. gender improved repayment by 0.05 per cent. It also supports Kari (2009) that finds increased lending to women significantly improve loan repayment.

Aside the impact of gender on portfolio at risk, other control variables namely operating self-sufficiency (OPSS), interest rate (YIELD), MFBs scale, efficiency (EFF) and interest rate of group-based lenders also impact significantly. For example, the result shows that operating self-sufficiency and interest rate significantly and negatively impacted on the portfolio at risk

implying that a unit increase in these variables would reduce portfolio at risk by 0.1 and 1.2 per cent, respectively. This implies that a more sustainable MFBs would be more associated with low portfolio-at-risk. Further analysis suggests that increased interest of group-based lenders could reduce portfolio at risk by 0.1 per cent and by implication reduce the repayment rate. This is not surprising as most microfinance institutions prefer group lending to individual lending model because of moral hazard problem. The impact of MFBs scale on portfolio at risk is negative (-0.5) as expected, suggesting the more lager MFBs becomes, the lower the portfolio-at-risk.

Table 4.11: Women and Repayment Regressions

	FIXED EFFECT		RANDOM EFFECT	
	Portfolio at Risk (PAR) (13)	Provision Expense Rate (PROBAD) (14)	Portfolio at Risk (PAR) (15)	Provision Expense Rate (PROBAD) (16)
Gender	-0.12*	-0.06**	-0.11*	-0.06**
	(-1.68)	(-2.48)	(-1.63)	(-2.51)
Operating Self-Sufficiency (OPSS)	-0.08**	-0.06***	-0.08**	-0.06***
	(-2.51)	(-5.19)	(-2.49)	(-5.19)
Yield	1.15***	0.10	1.15***	0.10
	(5.65)	(1.59)	(5.70)	(1.59)
Yield x Individual Lending Model	-0.03	-0.02**	-0.03	-0.02**
	(-1.39)	(-1.93)	(-1.39)	(1.96)
Yield x Group Lending Model	-0.06**	0.01	-0.06**	0.01
	(-2.38)	(0.67)	(2.41)	(0.72)
Labour Cost x Individual Lending Model	0.05	0.10***	0.05	0.10***
	(0.81)	(4.07)	(0.78)	(4.12)
Labour Cost x Group Lending Model	0.03	-0.09***	0.03	-0.09***
	(0.34)	(2.82)	(0.37)	(-2.88)
Log of Scale (LSCALE)	-0.04**	-0.003	-0.04**	-0.003
	(-2.74)	(-0.63)	(2.74)	(-0.65)
Efficency (EFF)	-0.53***	0.05**	-0.54***	-0.06**
	(-5.78)	(2.07)	(-5.85)	(-2.16)
Constant	0.79***	0.12**	0.79***	0.12**
	(4.58)	(2.12)	(4.57)	(2.15)

*( ) t-Statistic, *** significant at 1%, ** significant at 5%, * significant at 10%*

The Hausman test (13&15) shows Chi2(9)=0.31, with the Prob>Chi2=1.0000, while for 14 & 16 shows Chi2(9)=0.24 and Prob>Chi2=1.0000 . When P-value is insignificant i.e.

Prob>chi2 larger than 0.05, random effects is chosen but when is significant fixed effect is selected.

Based on Hausman test, Random effect models in column 15 & 16 are chosen for this analysis

Using the second indicator of repayment, provision expense rate (PROBAD) in column (16) of table 4.11. The result confirms the previous finding; increased lending to female client is negatively impacted on provision expense rate as expected. A unit increase in female lending reduces

provision expense rate by 0.1 per cent. This implies that MFBs with higher proportion of female clients are associated more with fewer provisions; this is also corroborating earlier finding of D'espallier et al. (2011) and that of Sharma and Zeller (1997).

The impact of operating self-sufficiency is negative and significant as expected. An increase in sustainability would reduce provision expense rate by 0.1 per cent, this implies that, the more sustainable a microfinance bank becomes the fewer the provisions for doubtful and bad loans.

4.11 Conclusion

The chapter examined sources of data and described data used for this study. It also presented the summary statistics. The descriptive statistics indicate that MFBs in Nigeria are divergent in sizes with state MFBs has the largest size. In term of sustainability of the industry, the Nigerian MFBs is unsustainable as the ratio of OPSS is below one; however, the degree of sustainability also differs among the three categories of MFBs. The statistics also indicated that MFBs in Nigeria lend more to men as 45 per cent of its total lending goes to women, on the average. Also, the pattern of lending to women differs among the various categories of MFBs, the national MFBs has the highest lending to women about 62 per cent. The thesis also explained the methodology and the hypotheses used for the study.

The results of the drivers of sustainability and test for the role of interest rate in microfinance sustainability and repayment, using one-way error component panel data regression methodology to shed light on issues that surround microfinance sustainability debate and the role of interest rates.

The results showed that yield, labour cost, gender, orientation, efficiency and loan size are the major drivers of microfinance sustainability at the national level in Nigeria. The results indicate that interest rate is an important driver of sustainability as 1 per cent increases in interest rate elicits 0.6 per cent changes in sustainability of microfinance banks in Nigeria. It implies that, as expected, the higher the interest rate, the higher the profit accrued to MFBs. The results also indicated that labour cost is high and inimical to microfinance sustainability in Nigeria. Increase in loan size also improves sustainability by 0.3 per cent.

The result further confirmed earlier findings from Cull et al. (2007) that individual lending model is significantly important and positively related to sustainability measures. An increase in individual lending interest rate elicits 0.1 per cent impact on sustainability of MFBs.

Further analysis shows increase in interest rate positively related with sustainability. However, at high interest rate only riskier borrowers have access to loan. By this result, it is clearly showed that too high interest rate can be detrimental to microfinance sustainability in Nigeria if raised too far Further analysis also showed that gross portfolio yield explained loan repayment (portfolio at risk) as indicated by the coefficients of its linear and squared terms. Even, after interacting gross portfolio yield with different lending models, the coefficient (-0.1) of group-based lenders' yield and the coefficient (0.2) of individual-based lenders' yield are as expected and significant in explaining changes on portfolio at risk.

The results of the mission drift model showed that sustainability is significant and negatively related with the average loan size (AVLOAN). It also showed

that sustainable MFBs tend to be more focused on the poor clients which imply increase in depth of outreach. However, in the second model, the result shows that operating self-sufficiency ratio (OPSS) is negatively related with percentage of women borrowers, although, the coefficient was not significant. The third subsection examined the impact of greater focus on microfinance female clients on repayment rate in Nigeria. The findings on role of female clients on repayment showed that both correlation coefficient and regressions confirmed that lending to women improves repayment rate and corroborate the earlier finding of D'espallier et al. (2011) that found that gender lending improved repayment.

Chapter 5

Microfinance Sustainability and Outreach in Nigeria

(Case Study of Federal Capital Territory, Abuja)

5.1 Introduction

Microfinance promises to reduce poverty through provision of small loans which the formal financial institutions adjudge unprofitable due to high transaction costs. The innovation from microfinance re-kindles hope among policy makers in developing countries especially in Nigeria that the challenge of abject poverty, which had earlier defied government interventions, could be surmounted. However of recent, the industry has also been accused of drifting away from it initial mission owing to its drive of increasing financial performances (Mersland and Strom, 2010). In order to garner insights from state-specific experiences of microfinance banks' sustainability and outreach, this chapter of the thesis provides experiences of microfinance banks in the Federal Capital Territory, Abuja of Nigeria established by the Federal Capital Territory Act of 1976.

The Federal Capital Territory (FCT) is a land-locked state located in the North Central geo-political zone of Nigeria. The efforts of the Nigerian government in the time past to initiate poverty reduction target programmes such as Operation Feed the Nation (OFN), Directorate for Food, Roads and Rural infrastructure (DFRRI), Better Life for Rural Women (BLRW), Family Support Programmes (FSP), National Economic Empowerment Strategy (NEEDS) and National Poverty Eradication Programme, amongst others,

which cut across all states did not yield expected results (Ehigiamusoe, 2011). For example, UNDP (2009) puts the FCT human poverty index at 21.0 while inequality or internal disparity within FCT was as high at 0.64. The subjective poverty survey based on self-assessment, 97.9 per cent of the people in FCT rated themselves as being poor (National Bureau of Statistics, 2010). Some of the reasons adduce for the failure include undue political influences, corruption and inefficient allocation of resources, because of these, the prevalence of poverty and inequality in FCT still persist. The detail socio-economic background of FCT, Abuja is presented in appendix 4.

In view of the reality of high incidence of poverty and income disparity in FCT, Abuja, it becomes imperative to adopt sustainable poverty reduction strategy. This chapter of the thesis provides insights to possible factors driving the sustainability of microfinance within the FCT, Abuja. The chapter therefore seeks to examine the operations and performance analysis of microfinance banks in the Federal Capital Territory (FCT), Abuja. The first section uses data of 38 MFBs in FCT, available with the CBN during 2001 – 2014 to examine the drivers of sustainability and to answer issues of surrounding mission drift and high interest rate within the FCT. The objective is to test whether the pattern displayed for the whole country in the previous chapters can be replicated in a single state. In addition, the second part of the chapter uses data from survey of some selected operators of microfinance banks within Abuja in 2014 to answer some questions relating to microfinance sustainability, interest rate, repayment, women lending and

the challenges confronting the industry in FCT, Abuja. The last section concludes the chapter.

5.2 Data Analysis, Presentation of Regression Results

This first section of chapter 5 analyses the characteristics of Abuja MFBs' data. It uses these data to estimate regression models with reference to the specified models in chapter 6 of the thesis.

5.2.1 The Descriptive Statistics

The descriptive statistics from table 5.1 suggests that in FCT microfinance banks lend more to male clients than female clients, on the average, out of 64 observations, women account for 36 per cent of microfinance banks' total clients compared with 45 per cent for industry average in table 4.2. The pattern and composition of microfinance banks clients within FCT seems to be diverged as in some banks, women account for less than 1 per cent of their total clients while in some other cases, women composition is as high as 80 per cent of the total clients. Also, table 5.2 indicates that both state and unit MFBs lend 37 and 36 per cent of their loans to women within the FCT. This also supports earlier finding of 45 per cent in table 4.2 for the whole industry that MFBs in Nigeria lend more to male clients than female clients

The average portfolio at risk (PAR) within FCT microfinance banks is about 37 per cent compared with 26 per cent of the industry average in table 4.2. This suggests that there are more loan delinquencies in FCT MFBs compared with the whole industry. The pattern of risks within the FCT vary from banks to banks, in some cases is as low as less than 1 per cent while

others are extremely high. The risk profile of state MFBs of 16 per cent in FCT seems not to be significantly different from 15 per cent for the entire state MFBs in Nigeria as shown in table 5.2 and 4.2, respectively. However, portfolio-at-risks differ for unit MFBs, the risk within FCT unit MFBs is 44 per cent, higher than 28 per cent for the entire unit MFBs in the country.

Microfinance bank is said to be sustainable when its operating self-sufficiency indicator equals to and above 1, but when less than 1 is termed un-sustainable. In FCT the sustainability indicator (OPSS), on the average, suggests that the industry is yet to be sustainable, the ratio is 0.40 compared with national average of 0.56 in table 4.2. Within the FCT the minimum ratio is 0.03 while the maximum is 1.84, this implies that some microfinance banks are highly sustainable while some cannot keep their operations going without recourse to either external or internal subsidies, which also implies that they are not sustainable. Further analysis of OPSS in table 5.2 indicates that both state and unit MFBs are unsustainable at the ratios of 0.39 and 0.40, respectively.

As shown in table 5.1, the MFBs' write-off rate (WRFR) of about 43 per cent in FCT is relatively higher when compared with the industry average of about 9 per cent as indicated in table 4.2. The high interest rate (YIELD) of 38 per cent compared with 31 per cent for the industry might account for high write-off rate in FCT. Also, provision expense rate i.e. provision for bad debt is 15 per cent in FCT higher than 9 per cent for the industry average.

Table 5.1: Descriptive Statistics (FCT, Abuja)

Variable Name	Definition of Variable	Mean	Minimum	Maximum
OPSS	Financial Sustainability	0.40	0.03	1.84
AVLOAN	Average loan balance per borrower	2.35	0.001	15.26
LOAN	Total Loan Size	2,053	4.88	65,485
LABCOST	Labour Cost	0.18	0	6.6
EFF	Efficiency	0.76	0.02	14.02
SCALE	Total assets	3,423	54.12	87,101
LOASS	Loans to Assets Ratio	0.52	0.04	2.09
PAR	Port-folio at Risk	0.37	0	6.88
GENDER	Percentage of women borrowers	0.36	0	0.80
YIELD	Yield on gross loan portfolio	0.38	0.05	7.78
WRFR	Write-off rate	0.43	0	2.18
PROBAD	Provision expense rate	0.15	-0.14	1.39

Source: Central Bank of Nigeria's FinA Off-Site Surveillance System, data base. The values of AVLOAN, LOAN and SCALE are in US$'000

AVLOAN is the average loan size of microfinance banks. The average loan size of microfinance banks in FCT is US$2,350 million compared with industry average of US$1,590 million it implies that average loan size in FCT is relatively higher than the industry average. Within the FCT, some microfinance lend as low as US$1.00 while others has maximum average loan size is as high as US$15,260 as shown in table 5.1. Further analysis as shown in table 5.2 reveals that average loan size differ when comparing

state MFBs and unit MFBs within the FCT, it valued at US$3,520 and US$1,950, respectively.

Moreover, the MFBs' labour cost (LABCOST) is relatively lower in FCT than the whole industry. The average labour cost within the FCT is around 18 per cent as shown in table 5.1 compared with the industry average of 57 per cent in table 5.2. Also, table 5.2 further indicates that labour cost is as low as 4 per cent for state MFBs and 20 per cent for unit MFBs within the FCT. The interest rate (YIELD) of microfinance within the FCT, on the average, is about 38 per cent higher than the industry figure of about 31 per cent. The interest rate of about 38 and 31 per cent both the FCT MFBs and the industry average is well acceptable to promoters of microfinance commercialization since is well below 100 per cent and above of money lenders' interest rates. However, to the welfarists, such high interest rate could crowd out the poor which is the initial goal of the industry.

Table 5.2: Summary Statistics

	State MFBs				Unit MFBs			
Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
OPSS	0.39	0.17	0.08	0.69	0.4	0.33	0.03	1.84
GENDER	0.37	0.14	0.17	0.59	0.36	0.17	0	0.8
AVLOAN	3.52	3.03	0.39	9	1.95	3.06	0.001	15.26
PAR	0.16	0.2	0.002	0.6	0.44	1	0	6.88
LABCOST	0.04	0.02	0.01	0.12	0.2	0.83	0	6.6
LOASS	0.58	0.15	0.29	0.75	0.5	0.7	0.003	19.75
EFF	0.16	0.09	0.03	0.41	0.89	2.52	0.02	14.02
YIELD	0.25	0.13	0.08	0.64	0.41	0.93	0.01	7.78
PROBAD	0.01	0.04	-0.12	0.13	0.19	0.35	-0.14	1.39
WRFR	na	na	na	na	0.43	0.81	0	2.18
LOAN	10096.4	17620.9	656.5	65485.26	425.44	378.3	4.83	1947.15
SCALE	15734	23588.33	938.09	87101.76	900.92	703.31	54.12	3275.9

Source: *Author's calculation based on the data from the Central Bank of Nigeria. The values of Outreach, Loan and Size are in US$'000*

5.2.3 Sustainability Results

To determine drivers of microfinance banks in FCT, we replicate the equation 4.3 specified in chapter 4 of the thesis. The results are presented in table 5.3. Hausman test is applied to choose the most appropriate between the two models in column 17 and 18. Based on the test, the fixed effect model in column 17 is chosen for this analysis. The result of the regression model shows that two variables namely orientation (LOASS) and efficiency (EFF) and size of loans (LLOAN) significantly drive microfinance sustainability in FCT. Compared with the result in table 4.3 for the whole industry that indicated that all the six variables, namely, yield, labour cost, size of loan, efficiency, orientation and gender significantly drive MFBs' sustainability.

The negative signs of LOASS (-0.3) and positive signs of LLOAN (0.03) for both MFBs in FCT and for that of the industry are the same, but the magnitude of impacts differ The positive coefficients of loan size show that sustainability of microfinance could be improved by increasing loan size in FCT, Abuja.

The interest rate (YIELD) which play significant role in driving sustainability of microfinance banks for the whole industry in chapter 4 of the thesis seems to be dormant in driving sustainability within the FCT.

Table 5.3: Sustainability Regression

	Fixed Effect	Random Effect
	Operational Self-Sufficiency	**Operational Self-Sufficiency**
	17	18
Yield	0.06	0.09
	(0.46)	(0.73)
Gender	0.03	-0.03
	(0.19)	(-0.16)
Labour costs to Assets (LABCOST)	0.03	-0.04
	(0.51)	(-0.64)
Loan to Assets (LOASS)	-0.34***	-0.27***
	(-3.70)	(-2.96)
log of Loan (LLOAN)	0.33*	0.04***
	(1.70)	(1.74)
Efficiency Indicator (EFF)	-0.04	-0.05
	(-1.02)	(-1.28)
Constant	0.13	0.09
	(0.58)	(0.40)

*( ) t-Statistic, *** significant at 1%, ** significant at 5%, * significant at 10%*
The Hausman test (1&2) shows Chi2(5)=-99.17, with the Prob>Chi2=0.0000, When P-value is insignificant i.e. Prob>chi2 larger than 0.05, random effects is chosen but when it is not significant fixed effect is selected. Based on Hausman test, Fixed effect in column 17 is chosen for this analysis.

Source: Author's calculations, based on data from the CBN.

In view of these findings, we probe further by squared the interest rate (YIELD) as previously done in chapter 4, to test the impact of high interest rate on sustainability in FCT. The result in column 20 of table 5.10 in appendix 5 shows that high interest rate (yield-squared) was not significant in explaining variations in sustainability in FCT.

Also we probe further if microfinance banks in FCT still focus on its initial mission of poverty reduction or have been drifted away from it because of commercialisation. Two indicators of microfinance outreach are used namely average loan size and percentage of female clients as dependent

variables in each of the model as against operating self-sufficiency and other control variables as specified in equation 4.5 of chapter 4. Surprisingly, operating self-sufficiency was not significantly impacted on both measures of outreach, namely, average loan size and percentage of female clients as shown in column 23 and 22 of table 5.11, respectively, in appendix 5.

Moreover, the debate that female client have better repayment records than female client microfinance banks could aggravate portfolio at risk thereby leading to low repayment of loans by the borrowers was examined as in the previous chapter. To test this assertion, two regression models are estimated as shown in table 5.12 column 27 and 28 in appendix 5 were chosen based on Hausman test, where portfolio at risk and provision expense rate represent the dependent variable for each regression model. The impacts of gender and other control variables are tested on the portfolio at risk and provision expense rate. The results of the two equations show that gender was not significantly impacted on both repayment measures in FCT, Abuja.

5.3 The Survey Methodology and Results

This second section explains the methodology and presents the results of survey of 30 microfinance banks within the FCT, Abuja, which the researcher conducted in 2014. The intension was to know the views and perceptions of operators of microfinance banks within FCT, Abuja, aside the information obtained from the CBN's data which was used for the preceding regressions.

5.3.1 The Survey Area

The survey was conducted in Abuja, the Federal Capital Territory (FCT) of Nigeria. The FCT was created in 1976 with the landmark of about eighty thousand square kilometers; it has about 2.2 million household and population of about 6.7 million people. The study area is surrounded on the North by Kaduna State, on the South by Kogi State, on the West by Niger State and on the East by Nasarawa Sate. The area consists of urban area mainly in the municipal, city centre area, semi-urban areas mainly in area council headquarters and 858 rural communities. The major occupation of the people in the area is farming, while others are civil servants and traders.

5.3.2 Method

The thesis designed a survey questionnaire to get some vital information about each microfinance banks' operations within FCT, Abuja. The intention was to get relevant variables, practices and views of operators about microfinance sustainability which could not be obtained from the data the Central Bank of Nigeria. To achieve this objective, questionnaire were administered to thirty operators of registered microfinance banks in FCT. Head offices of these microfinance banks in FCT, Abuja were visited and one questionnaire each was administered to a staff in management position of each MFB, staff that had good knowledge of the organisation to answer series of questions in the questionnaire (Appendix 2).

5.3.3 Instrumentation and Procedure for Data Collection

The primary data used were sourced from cross-sectional survey. To collect these data, Likert-type questionnaire were carefully structured, designed and administered to each microfinance bank. To really capture the

objectives of the study, the measuring instruments used mainly ranges from three-point to four-point Likert-type questionnaire depending on what the questions try to elicit. The questionnaire was made up of two sections. Section one requires the personal information of microfinance banks operators, while section two contains fifteen carefully structured Likert types questionnaire on sources of funding and revenue, operation cost, loan repayment, lending model, interest rate and challenges facing microfinance banks and possible solutions to the identified challenges.

5.3.4 Method of Data Analysis

Both qualitative and quantitative techniques were applied to analyse the data. At the collection stage, major segment of the responses from the collected questionnaire was qualitative. Then, a simple comparison was conducted in form of charts and tables to answer some research questions.

5.3.5 Data Analysis and Results from the Survey

This section of the thesis analyses the results of the survey conducted on the existing microfinance banks within the FCT, Abuja in 2014.

5.3.5.1 Data Analysis

A total of forty-seven (47) function microfinance banks exist in FCT, Abuja in 2014, out of these 5 MFBs (10.6%) are State microfinance banks, while the remaining 42 MFBs (89.4%) are Unit microfinance banks. From the total number of the functional MFBs, 30 (63.8%) were randomly selected for the survey. Out of the 30 questionnaire distributed to the 30 selected MFBs, 27 questionnaire (90.0%) were retrieved while the remaining 3 questionnaire (10.0%) were refused. Therefore, the rest of this analysis will be based on

the results of 27 questionnaire retrieved which constituted about 90.0% of the total surveyed MFBs (Table 5.4).

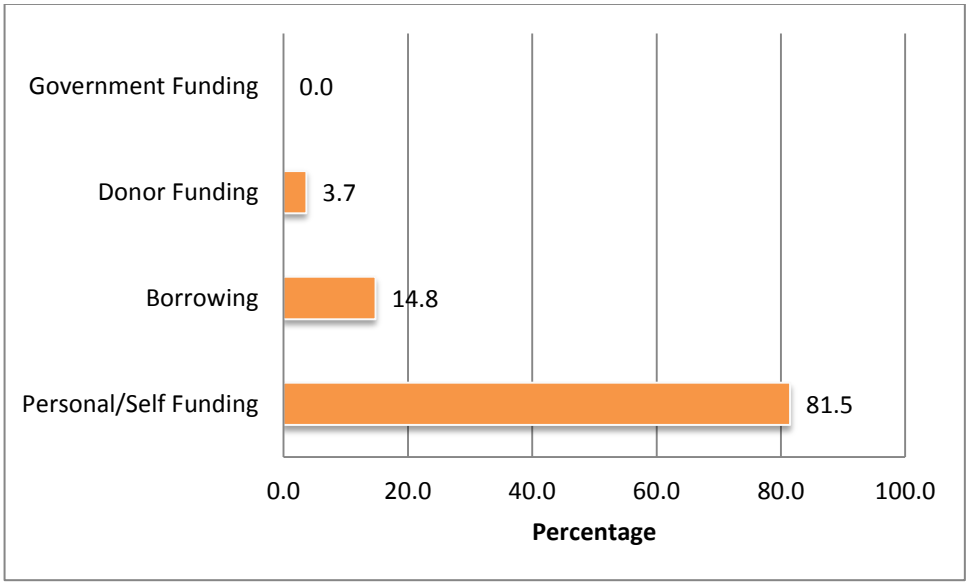
Table 5.4: Analysis of MFBs In FCT, Abuja

	Number of MFBs	Percentage
Total number of Functional MFBs	47	
Total number of MFBS Sample MFBs	30	63.8
Number of Questionnaire Retrieved	27	90.0
Number of Questionnaire Refused	3	10.0

5.3.5.2 Source of MFBs' Funding in FCT, Abuja

Majority of the MFBs in FCT claim that sourced their fund from personal saving as about 81.5 % mainly sourced their fund either from personal savings or other self-funding sources. Also, 14.8% of the MFBs sourced their funding from borrowing, 3.7% depend on donors' funding, while none of them depend on the government for funding (figure 5.1).

Figure 5.1: Source of MFBs' Funding in FCT Abuja



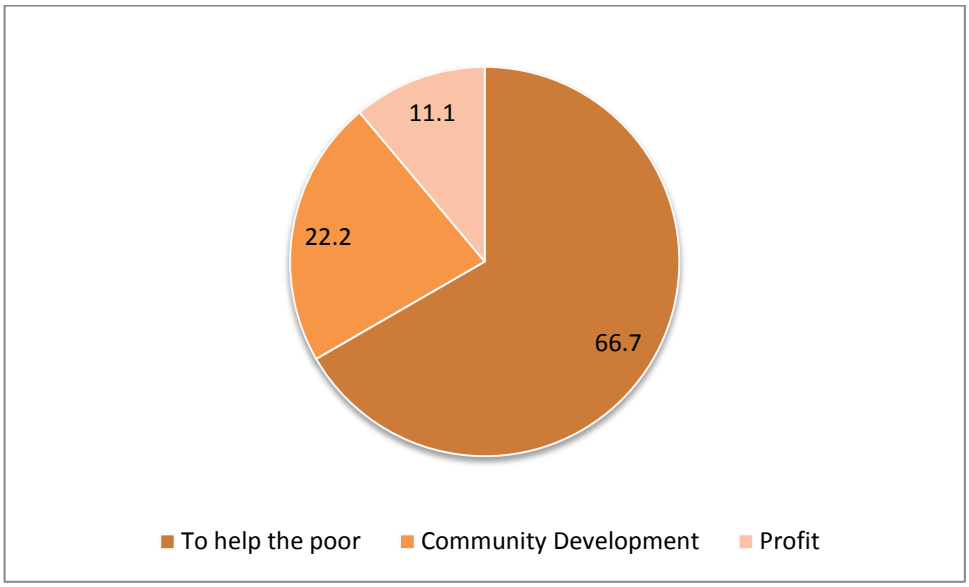
5.3.5.3 Major Objective of MFBs in FCT, Abuja

The findings from table 5.5 and figure 5.2 suggest that the major motivation of establishing microfinance banks in FCT, Abuja is reach out to the poor. Out of 27 respondents, 18 MFBs (66.7%) indicated that their primarily objective is to help the poor. Also, 6 MFBs (22.2%) showed that they are mainly for community development while the remaining 3 MFBs (11.1%) said their mainly objective is to make profit.

Table 5.5: Primary Goals of MFBs in FCT, Abuja

	To help the poor	Community Development	Profit	Total
Respondents	18	6	3	27
Percentage	66.7	22.2	11.1	100.0

Figure 5.2: Primary Goals of MFBs in FCT Abuja (%)



5.3.5.4 Major Source of MFBs' Revenue in FCT, Abuja

Although, majority of MFBs in Abuja indicated that they are for the poor in section 5.6.5.3, further analysis revealed that they got their revenue mainly from interests on loans. Interests on Loans accounted for 92.6 per cent of their total revenue. This implies that MFBs in FCT, Abuja must have been charging high enough interest rate that could cover the costs so as to keep them in business. Other sources of revenue accounted for 7.4% of the total revenue while the charges on leasing seem to suggest no significant role in revenue generation (table 5.6).

Table 5.6: Major Source of MFBs' Revenue

	Interest on Loans	Charge on Leasing	Others	Total
Number of MFBs	25	0	2	27
Percentage	92.6	0.0	7.4	100.0

5.3.5.5 Major Challenge in Accessing Loans in FCT, Abuja

The finding from table 5.7 showed that 23 MFBs (85%) perceived that lack of collateral security constitute a major challenge why clients find it difficult to access micro loan as issue of trust play significant role who get the loans.

Table 5.7: Clients' Major Challenge in Accessing Loans of MFBs

	High Interest Rate	Non Availability of Micro Loans	Collateral Security	Total
Number of MFBs	0	4	23	27
Percentage	0.0	14.8	85.2	100.0

While 4 MFBs (14.8%) is of the opinion that non-availability of micro loans, especially in a medium and longer terms, is major challenge hindering clients from accessing loans from them. None of the MFBs believed that

high interest rate as major challenge. This confirms the general belief of MFBs that microfinance clients care less about high interest rate but are more concerned about access to loans.

5.3.5.6 Perception of MFBs on Operation Costs in FCT, Abuja

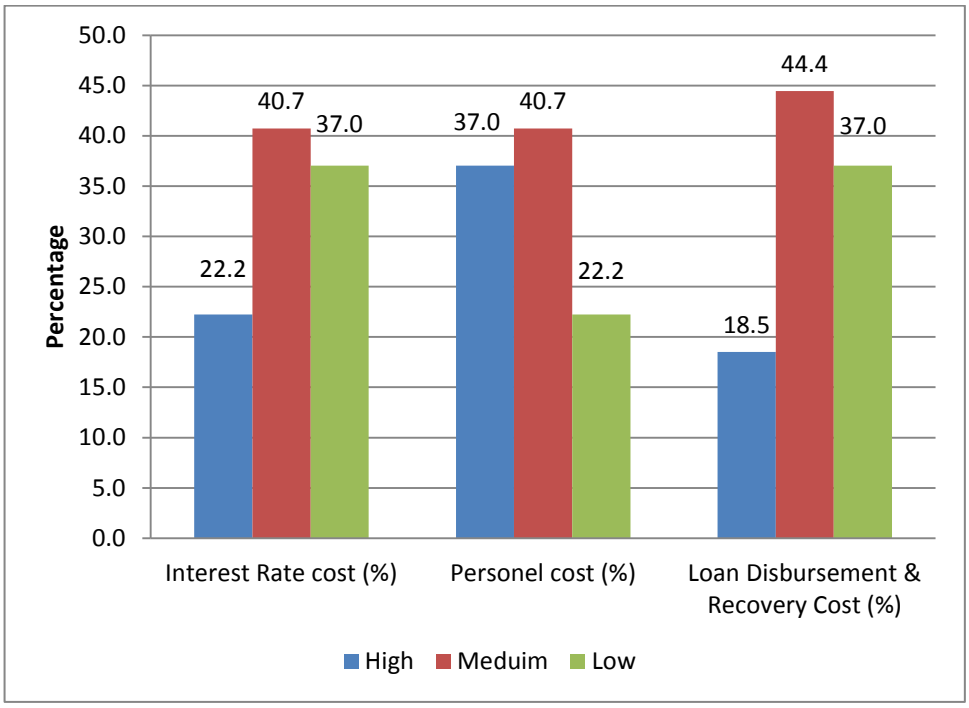
To examine MFBs perception about their operating costs, the costs were divided into three, namely, interest rate cost, personnel cost and disbursement & recovery cost. On average, 42.0% of MFBs are of the opinion that operating cost is medium, 32.1% believed that the cost is low while the remaining 25.9% thought that operating cost is high (table 5.8).

Table 5.8: Operation Costs of MFBs (%)

	Interest Rate cost (%)	Personnel cost (%)	Loan Disbursement & Recovery Cost (%)	Average Operating Costs (%)
High	22.2	37.0	18.5	25.9
Medium	40.7	40.7	44.4	42.0
Low	37.0	22.2	37.0	32.1
Total	100.0	100.0	100.0	100.0

The disaggregation of interest rate cost in figure 5.3 further showed that 40.7% of MFBs believed that the rate is medium, 37.0% said is high, while 22.2% believed is high. Also, in-depth analysis of personnel cost showed that 40.7% of MFBs ranked the cost as medium, but 37.0% ranked it as high while the remaining 22.2% of MBs ranked it low. In addition, disaggregation of loan disbursement and recovery cost indicated that 42.4% of MFBs believed it is medium, 37.0% ranked it low and 18.5% ranked it high.

Figure 5.3: Perception of MFBs on Operation Costs

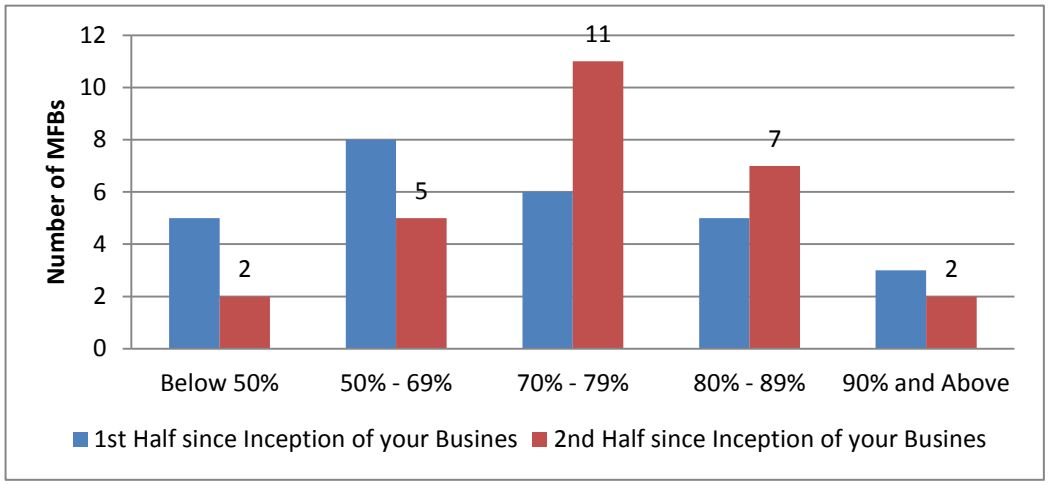


5.3.5.7 Perception of MFBs on Clients' Loan Repayment in FCT, Abuja

In order to test if clients' loan repayment has improved or fallen since inception of microfinance banks in FCT, Abuja, the periods of existence of MFBs are divided into two namely, 1st half since inception of business and 2nd half since inception of business. Each MFB were asked to rank their perception giving them options of below 50%, 50%-69%, 70%-79%, 80%-89%, and 90% and above. This is to test their perception whether customers' loan repayment has improved or not.

Finding as shown in figure 5.4 indicated that 18 (66.7%) of the 27 MFBs is of the view that repayment rate has improved since the inception of business. While the remaining 8 (33.3%) of the MFBs believed that the repayment rate has worsened inception of business.

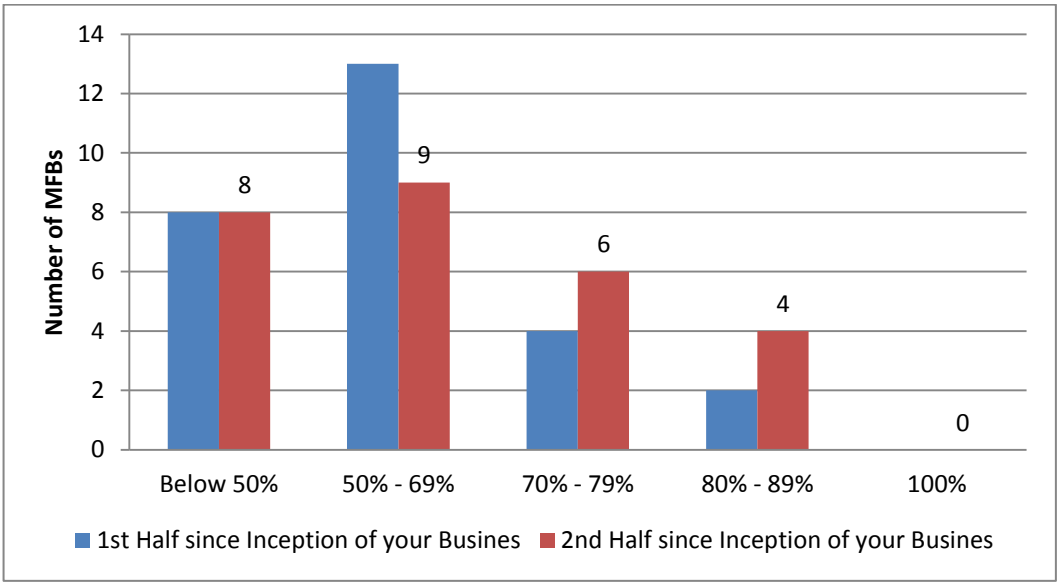
Figure 5.4: Perception on Clients' Loan Repayment Rate



5.3.5.8 Perception of MFBs on Lending to Women in FCT, Abuja

Also, the perception of MFBs operators is tested on percentage of loan to women clients whether or worsened in FCT, Abuja. The periods of their operation also are divided into two namely, 1st half since inception of business and 2nd half since inception of business. Each representative of MFB were asked to rank their perception giving them options of below 50%, 50%-69%, 70%-79%, 80%-89%, and 100%. This was done to test their perception whether lending to women has improved or not. The finding suggests that 10 of the total 27 MFBs which represent 37.0 % per cent of the total MFBs surveyed believed that lending to women has increased since the second half of business. Also, 9 MFBs (33.3%) were of the opinion that the percentage lending to women has fallen since the second half of inception of business, while the 8 MFBs (29.6%) were indifferent (figure 5.5).

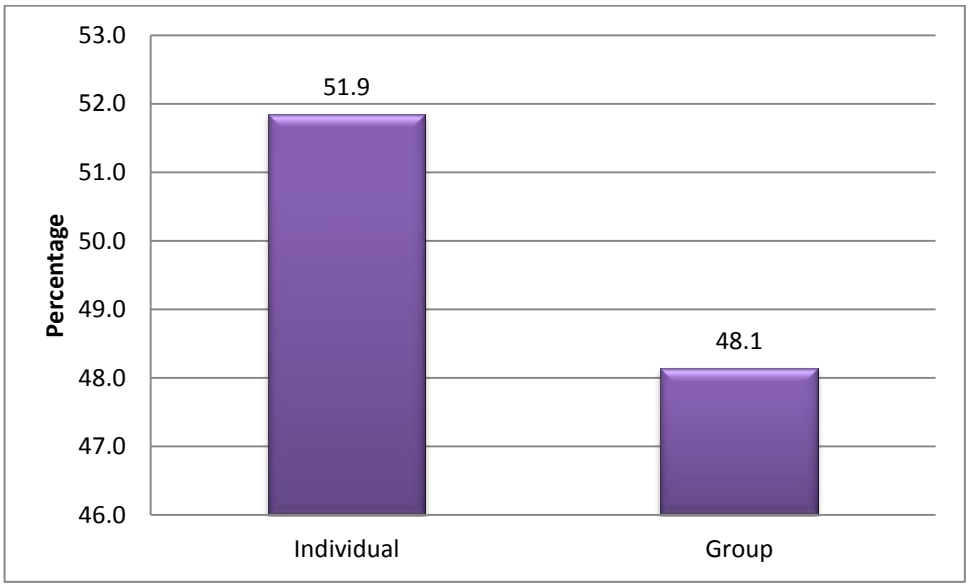
Figure 5.5: Perception of MFBs on Lending to Women



5.3.5.9 Lending Models of MFBs in FCT, Abuja

Analysis of the survey data showed that 51.9% of MFBs in FCT, Abuja majorly preferred individual lending model while the remaining 48.1% mainly used group lending model (figure 5.6). Reasons adduced for preference for individual lending model included easy accessibility to individual clients, difficulties in forming group in urban area where people come from different background and find it difficult to trust one another, individual clients are well known to the lender and lastly past experience of group lending did not encouraging continuity. However, the remaining 48.8% of MFBs that opted for group lending model believed that absence collateral securities on the part of clients required them to adopt cross guarantee methodology such as forming groups. They also believed that group lending would reduce high default rate and also minimizes loan loss and guaranteed easy repayment.

Figure 5.6: MFBs Lending Models in FCT, Abuja



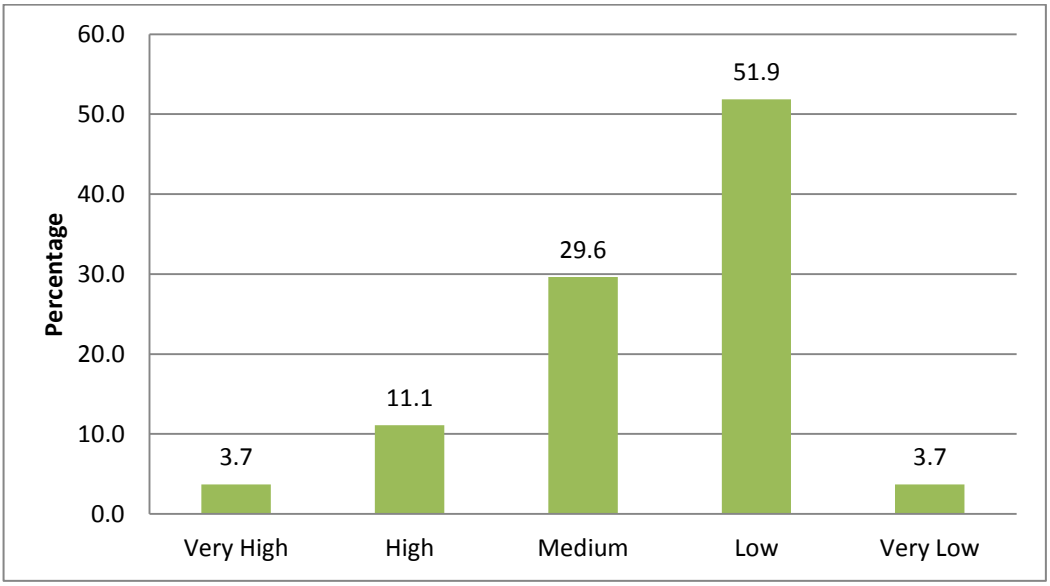
5.3.5.10 Interest Rate and Repayment Rate of MFBs' Loans in FCT, Abuja

To test the views of MFBs on the likely impact of interest rate on microfinance clients' loan repayment, each respondent MFB were required to tick their responses as appropriate from the choice of very high, high, medium, low and very low. The finding indicated that 14 MFBs which constituted about 51.9 of total respondents believed that effect of interest rate low. While 8 respondent MFBs said it has medium effect, 3 MFBs (29.6%) believed the effect is high. Also, the remaining two MFBs which constitute 3.7% each of the total MFBs surveyed were of the opinions that the effects is very high and very low (table 5.9 and figure 5.7).

Table 5.9: Interest Rate and Loan Repayment

	Very High	High	Medium	Low	Very Low	Total
Number of MFB	1	3	8	14	1	27
Percentage	3.7	11.1	29.6	51.9	3.7	100.0

Figure 5.7: Perception on Interest Rate and Repayment



Majority of the surveyed MFBs believed that clients do not see microfinance loans as high as that of money lenders and as such not finding it difficult to pay back their loans, in the views of respondent MFBs, this explains the low effect of interest rate on loan repayment as indicated in figure 5.12 above.

5.3.5.11 Challenges Confronting MFBs in FCT, Abuja

There are different challenges identified by the respondents that inhibit the growth of the industry, these challenges can be categorized broadly into five, namely funding challenge, wrong customers and operators' perception, competition from Deposit Money Banks (DMBs) entering the industry, wrong government policies and high operating costs, amongst others.

Finding showed that 51.9% of the respondents identified wrong perceptions by both lenders and borrowers as the major challenge in the industry. In some cases, borrowers believed that microfinance loans is government loans to help the poor and hence are not willing to repay their loans. While others use false information to obtain loans and later divert it to other use

therefore making repayment difficult, also, some clients do not believe MFBs are reliable enough to hold fund. In some other cases the risky behaviour of some customers scared MFBs to lend them micro loans.

The second major challenge identified by the respondent is the lack of funding for microfinance activities or services. For example, 40.7% of the respondents said they do not enough fund to meet customers' demand and to reach the target group and some other MFBs find it difficult to raise deposits from the customers. In some cases where the findings are even available, the costs of it are not cheap making it difficult for onward lending to the poor.

Moreover, 22.2% of the total respondents identified high operating cost as a major challenge to their services to the poor. The dearth of infrastructure such as adequate supply of power contributed to the increased overheads cost and more also connectivity challenge that makes it difficult to satisfy customers at appropriate time. Aside this challenge, 18.5% of the respondents also identified wrong government policies as a major challenge. These include tight regulatory policies, government taxation policies, non-government assistance of the industry in term of cheap funding and the frequent fear that some MFBs might be liquidated by the government and customers losing their investments.

Lastly, 11.1% of the respondents mentioned competition resulting from DMBs entering the industry as a major challenge. In term of raising deposits, DMBs are better-off and enjoy clients' confidence more than typical microfinance bank, this seems to crown out activities of some MFBs.

5.4 Conclusion

This chapter of the thesis has examined the issues that surround microfinance sustainability and outreach in Nigeria using the Federal Capital Territory, Abuja as a case study. Basically two methodologies were used to capture these issues, namely, panel data methodology during 2011-2014 and survey methodology of MFBs conducted in 2014. The results from the panel regression model indicated that two variables drive microfinance sustainability in Abuja; they include orientation (LOASS) and loan size (LOAN) compared with six significant variables for the whole industry.

Further result also indicated that interest rate was not significant in explaining variations in sustainability in Abuja. Also, operating self-sufficiency was not impacted significantly on the two measures of outreach namely, average loan size and percentage of female lending, even though, the coefficients are positive in both cases. The result also indicated that lending to female clients was not significant in explaining repayment of loans in FCT, Abuja.

The survey results suggested that majority of MFBs in FCT, Abuja sourced their initial funding from personal savings; they primarily aimed at reaching out to the poor and depended mainly on interest rate for revenue generation. Findings also showed that wrong perceptions of clients about the reliability of MFBs activities and the perceived unethical behaviour of some clients by the MFBs, is the most challenging difficulty majority of the clients faced in accessing microfinance loans in Abuja. Also, findings indicated that majority of MFBs in Abuja believed that their costs of operations are moderate, they hold strong opinion that lending to women

had increased due to increased lending to women since the second half of business.

In addition, majority of MFBs in Abuja believed that their interest rates are low and does not affect clients' repayment of loans. Further findings indicated that majority of MFBs preferred individual lending model because of easy accessibility to individual clients and difficulty in forming group in a mixed society with different backgrounds and values system. Lastly, the findings showed that, aside wrong perceptions, dearth of MFBs' funding, high operating due to lack of infrastructures and unfriendly government policies are major challenges to the growth of the industry in FCT, Abuja.

Chapter 6

Conclusion and Policy Recommendations

6.1 Introduction

This thesis empirically examined microfinance sustainability and outreach in Nigeria during 2011-2014. The thesis tries to solve an important problem which has not been sufficiently answered in the literature, and remains un-investigated in Nigeria due to non-availability of large microfinance data in the recent past: The implications of microfinance scaling up or sustainability on outreach. In attempt to solve this problem, the thesis reviewed relevant theories and empirical literature and also designed analytical framework which form the basis of the research questions, the thesis set to answer. To properly captured and addressed this problem, data on 752 microfinance banks in Nigeria were collected from the Central Bank of Nigeria to answer some of these questions. Also, the Federal Capital Territory, Abuja was chosen by the researcher and structured questionnaire administered to the officials of microfinance banks within the territory to test if the experience of whole country could be replicated in a single state.

Following this introduction to the concluding chapter is the second section. It discusses the main findings of the thesis. Section three states the contributions of the study and policy recommendation. Section four discusses the limitations of the thesis and section five identifies areas of further research.

6.2 Summary of Main Findings

The main objective of thesis was to assess microfinance sustainability and outreach and the implications of such on the overall target of poverty reduction objective of microfinance institutions. Some research question were raised in section 1.3 of chapter one of the thesis. These research questions are individually addressed in chapters 4 and 5 with the insightful findings that contribute to the existing knowledge in microfinance field presented below.

6.2.1 What are the drivers of microfinance sustainability and the effect of interest rate on microfinance repayment in Nigeria?

In view of the increasing call for sustainability and the subsequent focus on commercialization of microfinance institutions, it is pertinent to examine factors aiding or driving sustainability and the implication of high interest rate on clients' repayment of loans. Chapter 4 and 5 of the thesis examined these issues.

Findings from chapter 4 showed that all the three categories of microfinance banks, namely, national, state and unit microfinance banks are unsustainable. The findings also showed that the three categories of MFBs differ in term of lending to women, risk profile and average loan size. National MFBs has the highest lending to women, highest average loan size and lowest portfolio at risk, while the unit MFBs recorded the lowest lending to women, highest portfolio at risk, highest labour cost and lowest average loan size. The findings from the regressions suggested that, at aggregate level, interest rate, labour cost, orientation, efficiency, gender and loan size are the principal variables driving microfinance sustainability in Nigeria. It

showed clearly that interest rate could initially promote sustainability but when the rate is too high, it is detrimental to microfinance sustainability as only riskier borrowers would have access to loans. Further finding showed that after interaction of interest rate with lending models, high interest rate of both individual-based and group-based lenders impacted on repayment rate, but the impact of individual-based lenders, is more severe than the group-based lenders. The findings from the state-specific regression in Chapter 5 of the thesis showed that two variables drive microfinance sustainability in FCT, Abuja; they include orientation and loan size. The role of interest rate which was significantly influenced sustainability for the whole microfinance industry was not significant in the regression for the Abuja case study. Also, regression showed that high interest rate was not significant in Abuja compared with what was obtainable when considering the whole industry. The survey result from selected MFBs in Abuja corroborates this finding as majority of MFBs interviewed in Abuja believed that their interest rates are low and does not affect clients' repayment of loans.

6.2.2 Does microfinance sustainability lead to mission drift in Nigeria?

The above stated research question was answered in chapters 6 and 7 of the thesis. Findings from chapter 4 using correlation coefficient suggested no evidence of mission drift. To further confirm this finding, the regression results in chapter 6 using sustainability as against average loan size indicated no evidence of mission drift both for the whole industry and for Abuja case study regression results in chapter 5. The survey result for

Abuja case study also alluded to this fact, as the majority of MFBs interviewed believed their lending to women has improved since the second half of their businesses. The regressions findings also showed clearly in chapter 4 and 5 that lending to women promotes more outreach to the poor. All these findings suggest that the claim of microfinance mission drift is not evident in Nigeria. In view of these findings, it implies that the pursuance of microfinance sustainability will not in any way shift attention from the poor which is the initial target of the industry in Nigeria.

5.2.3 Does increase in women outreach improve repayment rate in Nigeria?

The findings from chapter 4 of the thesis tried to answer the research question stated above. Analysis of total active microfinance clients showed that, on average, 45 per cent are women and average portfolio-at-risk which is proxy for repayment was 26 per cent. Suggestions from correlations coefficients point to the possibility that lending to female clients could improve repayment rate as one out of the three repayment variables, namely, portfolio at risk, provision expense rate and write-off rate had the expected signs. Also, findings from the regressions confirmed positive effect of women outreach in improving repayment rate. The two repayment indicators used in the regressions showed that increasing lending to female clients would improve repayment, which implies that higher proportion of female client is associated with higher repayment and with fewer loan provisions. This finding corroborates earlier findings of other recent studies.

6.3 Contributions of the Study and Policy Recommendations

This thesis has indeed contributed to the body of existing knowledge on microfinance sustainability and outreach. Some of these contributions are presented below:

First, the findings of this thesis lay aside fear that microfinance sustainability always lead to mission drift and the quest for sustainability will lead to abandoning of the poor who are the primary target of microfinance programme in Nigeria. The study has also identified major drivers of sustainability of microfinance in Nigeria. This finding will serve as a veritable tool in the hand of policy institutions such as the Central Bank of Nigeria to design policies that target these identified factors so as to reduce the costs associated with the operations and improve sustainability and performance of microfinance banks in Nigeria. In addition, the findings of the study will be beneficial to microfinance operators in Nigeria in designing their outreach policy. The finding has shown clearly that repayment rate could be improved by giving more preference to women in microfinance lending policy contrary the present practice in the industry, especially in Nigeria. Therefore to move microfinance banks to the next level, microfinance banks must specifically target women clients in Nigeria. The thesis has also established that too high interest rate could impede microfinance sustainability in Nigeria; this finding could assist regulatory and supervisory agencies to design policies that will encourage borrower friendly interest rate in the process of scaling up.

Aside these contributions, this thesis used large quantitative and reliable data from the Central Bank of Nigeria, the first of its kind, in Nigeria. The

findings from the quantitative data were complemented with primary data from microfinance operators (microfinance banks) through questionnaire within the FCT, Abuja to ensure the robustness of the findings from the thesis.

In view of these findings, the thesis concludes that sustainability and outreach are not necessarily incompatible. However in pursuing sustainability greater attention should be on female clients, as greater lending to women would improve the repayment rate of MFBs and further engendered the industry sustainability. The thesis also recommends increased capital base of microfinance banks to improve lending to the poor as well as implement policies that would reduce operation cost by providing infrastructures, improve efficiency and orientation of MFBs. These measures would improve microfinance services to the poor; and depth of outreach of MFBs in Nigeria.

6.4 Limitations of the Thesis

The primary aim and objective of the thesis was to ensure that findings emanating from the study have general application to all microfinance institutions in Nigeria. However, due to non-availability of data on other microfinance institutions in Nigeria, only data from registered microfinance banks available with the Central Bank of Nigeria were used which serve as a major limitation for the study. Notwithstanding, since most of the microfinance banks in Nigeria exhibit and possess characteristics of other microfinance institutions, there is strong probability that findings from this thesis could be applied to other microfinance institutions in Nigeria.

The last limitation of the study is the smallness of the time series dimension of the panel data, the time series only covered four years due to non-availability of data for years preceding 2011. However, this challenge is minimized because of large cross-sectional dimension of the series used for the study. The cross-sectional dimension covered 752 microfinance banks during the study period.

6.5 Areas of Further Research

This thesis examined sustainability and outreach of microfinance banks in Nigeria from the point of view of microfinance operators only. Further research could examine these issues from the point view of microfinance's clients as this will give clearer picture of microfinance outreach. Other area that could be exploited is to factor-in data of other microfinance institutions in Nigeria to further enrich the analysis.

Reference

Abiola, B. (2011): Impact Analysis of Microfinance in Nigeria. *International Journal of Economics and Finance*, Vol.3, no.4, pp. 217-225.

Abou-Ali, H., El-Laithy, H., Haughton, J., Khandker, S. (2010): Evaluating the impact of Egyptian social fund for development programmes. *Journal of Development Effectiveness*, Vol. 2, no. 4, pp. 521-555.

Abrar, A and Javaid, A. Y. (2014) Commercialization and Mission Drift – A Cross Country Evidence on Transformation of Microfinance Industry. *International Journal of Trade, Economics and Finance*, Vol. 5, No. 1, pp. 122-125.

Adams, D., Graham, D. and Von Pischke, J.D. (1984): *Undermining Rural Development with Cheap Credit*, Western View Press, Boulder.

Adams, S. and Bartholomew, T. A. (2010): The Impact of Microfinance on Maize Farmers in Nkoranza (Brong Ahafo Region of Ghana). *Journal of Management Research*, Vol. 2, no 2, pp. 1-13.

Adongo, J. and Stork, C. (2005): Factors Influencing the Financial Sustainability of Selected Microfinance Institutions in Namibia. The Namibia Economic Policy Research Unit, Available at: www.uneca.org/sites/default/files

Afrane, S. (2003): Impact Assessment of microfinance: Interventions in Ghana and South Africa, A Synthesis of major impacts and lessons. *Journal of Microfinance*, Vol. 4, no.1, pp. 37-58.

Afrane, S. K., and Adusei, M. (2014): The Female Superiority in Loan Repayment Hypothesis: Is it Valid in Ghana. *Advances in Management Applied Economics*, Vol. 4, no. 2, pp. 81-90.

Agbetunde, L.A. (2007): *Essentials of Cooperatives*. Lagos: Feetal Consulting

Agbo, F. (2009): Farmer's Perception of Cooperative Societies in Enugu State, *Agro-Science Journal of Tropical Agriculture, Food, Environment and Extension*, Vol. 8. No. 3, pp. 169-174

Ahmad, M. M. (2003): Distant voices: the view of the field workers of NGOs in Bangladesh on microcredit. *The Geographical Journal*, Vol. 169, no. 1, pp. 65-74.

Aigbokhan, B., and Asemota, A.E. (2011): An Assessment of Microfinance as a tool for Poverty Reduction and Social Capital Formation: Evidence on Nigeria. *Global Journal of Finance and Banking Issues*, Vol. 5, no. 5.

Akanji, O. O. (2002): Micro-finance as a Strategy for Poverty Reduction. *CBN Economic and Financial Review*, Vol. 39, no. 4.

Akanni, K. A. (2007): Effect of Micro-finance on small scale poultry business in South Western Nigeria. Emir. J. Food Agric, Vol. 19, no. 2, pp. 38-47.

Akhtar, M. N. and Bodla, M. A. (2011): A Conceptual Framework of Missing Links to Rural Poverty in Pakistan. *Journal of Applied Business and Economics*, Vol. 12, no. 2, pp. 90-10.

Akram, M. and Hussain (2011): The Role of Microfinance in uplifting Income Level: A Study of District Okara – Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, Vol. 2, no. 11, pp. 83-94.

Allison, P. D. (2009): *Fixed effects regression models*. London: Sage.

Anyanwu, C. M. (2004): Microfinance Institutions in Nigeria: Policy, Practice and Potentials. Paper Presented at the G24 Workshop on "Constraints to Growth in Sub Saharan Africa" Pretoria, South Africa.

Armendariz de Aghion, B., and Morduch, J. (2005): *The Economics of Microfinance*. Cambridge, MA: MIT Press.

Armendariz, B. and Morduch, J. (2010): *The Economics of Microfinance*. England: The MIT Press.

Armendariz de Aghion, B. and Szafarz, A. (2009) On Mission Drift in Microfinance Institutions. *CEB Working Paper*, vol. 09, no. 015.

Armendariz de Aghion, B. and Szafarz, A. (2011) On Mission Drift in Microfinance Institutions. In Armendariz de Aghion, B., and Labie, M. (Eds.), The Handbook of Microfinance. World Scientific publishing, London, Singapore, pp. 341-366.

Anyanwu, C.M., Ukeje, E.O., Amoo, B.A., Igwe, N.N., and Eluemunor, C.A. (2010): "The Agricultural Sector", chapter 4. Mordi, N.O.; Englama, A. and Adebusuyi, B.S. (Eds.), The Changing Structure of the Nigerian Economy. Atisele Vanessa Cards Co.; Nigeria.

Aroca, P. (2002): Microcredit impact assessment: the Brazilian and Chilian cases, Washington DC, Inter- American Development Bank.

Arrow, K. (1971): *Essays in the theory of risk bearing*. Chicago: Markham.

Arunachalam, R. S. (2006): What is Fianacial Self-Sufficiency? How to use it in Microfinace? Sa-Dhan Microfinance Manager Series: Technical Note, no. 14. Available at: www.sa-dhan.org

Awojobi, O. and Bein, M. A. (2011): Microfinancing for Poverty Reduction and Economic Development: a Case for Nigeria*. International Research Journal of Finance and Economics*, Issue 72

Ayayi, A. G. and Sene, M. (2010): What Drives microfinance Institutions' Financial Sustainability. *The Journal of Developing Areas*, Vol. 44, no. 1, pp 303-324.

Babandi, G. G. (2011): Micro Finance Institutions in Nigeria Outreach and Sustainability: Questionnaire Survey Findings. *International Journal of Business and Social Science*, Vol. 2, no. 9, pp. 126-129.

Baltagi, B.H. (2005): *Econometric Analysis of Panel Data*. England: John Wiley & Sons, Ltd.

Banerjee, A., Duflo, E., Glennerster, R., Kinnan, C. (2009): The miracle of microfinance? Evidence from a randomized evaluation. Available at: http://econ-www.mit.edu/files/4162

Barnes, C. (2001): Microfinance projects clients and impact: An assessment of Zambuko Trust, Zimbabwe. AIM Project, from USAID. Available at: htt://www.microlinks.org/

Bebczuk, R., and Haimovch, F. (2007): MDGs and Microcredit: An Empirical Evaluation for Latin American Countries. *Universidad Nacional de la Plata Working Paper*, no. 48.

Bell, A. and Jones, K. (2012): Explaining Fixed Effects: Random Effects modeling of Time-Series Cross-Sectional and Panel Data. Avaliable at: www.polmeth.wustl.edu/media/Paper/FixedversusRandom-1.pdf

Berhane, G. and Gardebroek, C. (2011): Does Microfinance Reduce Rural Poverty? Evidence Based on household Panel Data from Northern Ethiopia. *Amer. J. Agr. Econ*, Vol. 93, no. 1, pp. 43-55.

Bhatt, N., and Tang, S. Y. (2002): Determinants of repayment in microcredit: Evidence from programs in the United States. *International Journal of Urban and Regional Research*, Vol. 26, no. 2, pp. 360 – 376.

Blundell, R. and Costa Dias M. (2008): Alternative approaches to evaluation in empirical microeconomics. *Cemmap Working Paper*, Vol. 26, no 08.

Boehe, D. M. and Cruz, L. B. (2013): Gender and Microfinance Performance: Why Does the Institutional Context Matter? *World Development*, vol. 47, pp. 121-135.

Brehanu, A., and Fufa, B. (2008): Repayment rate of loans from semi-formal financial institutions among small-scale farmers in Ethiopia: Two-limit Tobi analysis. *Journal of Socio-Economics*, Vol. 37, no. 6, pp. 2221 – 2230.

Brewer, E., Genay, H., Jackson, W. E. and Worthing-ton, P. R. (1996): Performamce and Access to Government Guarantees: The Case of Small Business Investment Companies. *Economic Perspectives*, Vol. 20, no. 5.

Campion, A., Ekka, R. K., Wenner, M. (2010): Interest rates and implications for microfinance in Latin America and the Caribbean. *Inter-American Development Bank Working Paper Series*, No.177.

Campion, A. and White, V. (1999): *Institutional metamorphosis: Transformation of microfinance NGOs into regulated financial institutions*. Washington, DC: MFN Occasional paper, 4.

Carolyn, B., Morris, G. and Gaile, G. (1998): An Assessment of the Impact of Microfinance Services in Uganda: Baseline Findings. AIMS Paper. Washington, D.C.

CGAP (2001) Commercialization and Mission Drift: The Transformation of Microfinance in Latin America. *Occasional Paper*, No. 5

CGAP (2004): Interest Rate Ceilings and Microfinance: The Story So Far, *Occasional Paper*, No. 9

Cheston, S., and Kuhn, L. (2002): “Empowering Women through Microfinance”, chapter 4. In: Daley-Harris, S. (Eds.), Pathways out of Poverty. Kumarian Press, Inc., USA.

Christen, R. (2000): Commercialisation and mission drift: the transformation of microfinance in Latin America. Avaliable at: http://pdf.dec.org/pdf_doc/PNACL636.pdf

Christen, R. and Drake, D (2002) Commercialisation. The new reality of microfinance. In D. Drake, and E. Rhyne (Eds.), *The commercialization of microfinance, balancing business and development* (pp.2-22). Bloom-field: Kumarian Press.

Christen, R. P., Elisabeth, R., Robert, C. V. and Cressida, M. (1995): Maximising the Outreach of Microenterprise Finance: An Analysis of Successful Microfinance Programs. USAID Program and Operations Assessment Report, no. 10. Washington, DC: USAID.

Christen, R. P. (1997): Banking Services for the Poor: Managing for Financial Success, ACCION International.

Coleman, B. E. (2006) Microfinance in Northeast Thailand: Who Benefits and How Much? *World Development*, Vol. 34, No. 9, pp.1612-1638.

Coltler, P. and Woodruff, C. (2008): The impact of short-term credit on microenterprises: evidence from the Fincomun-Bimbo Program in Mexico. *Economic Development and Cultural Change*, Vol. 56, no. 4, pp. 829-849.

Conning, J. (1999): Outreach, sustainability and leverage in monitored and peer-monitored lending. *Journal of Development Economics*, Vol. 60, pp. 51-77.

Copestake, J., Bhalotra, S., Godwin, M., Grundel, H., Johnson, S., and Musona, D. (1998): Impact Assessment of the PULSE microfinance

programme in Lusaka, Zambia. Centre for Development Studies, University of Bath.

Copestake, J. (2007) mainstreaming Microfinance: Social Performance Management or Mission Drift? World *Development*, Vol. 35, No. 10, pp. 1721-1738.

Corsi, M., Botti, F., Rondinella, T., and Zacchia, C. (2006): Dialogue: Women and Microfinance in Mediterranean Countries. *Society for International Development,* vol. 49, no. 2, pp. 67-74.

Crabb, P. R. and Keller, T. (2006): A Test of portfolio Risk in Microfinance Institutions. Faith & Economics, Vol. 47, no. 48, pp. 25-39.

Cull, R.; Demirguc-Kunt, A. and Morduch, J. (2007): Financial Performance and Outreach: A Global Analysis of Leading Microbanks. *The Economic Journal*, Vol. 117, no. 517, pp. 107-133.

Cull, R.; Demirguc-Kunt, A. and Morduch, J. (2009) Microfinance meets the market. *Journal of Economic Perspectives*, Vol. 23, No. 1, pp. 167-192.

Cuong, N. V. (2008): Is a governmental microcredit program for the poor really pro-poor? Evidence from Vietnam. *Developing Economies*, Vol. 46, no. 2, pp. 151-187.

Daley-Harris, S. (2006): State of the Microcredit Summit Campaign Report. Washington DC: Microcredit Summit Campaign.

Dehejia, R., Montgomery, H., and Morduch, J. (2012): Do interest rates matter? Credit demand in the Dhaka slum. *Journal of Development Economics*, Vol. 97, pp. 437-449.

De Janvry, A.; McIntosh, C. and Sadoulet, E. (2010): The supply and demand side impacts of credit market information. *Journal of Development Economics,* Vol. 93, no. 2, pp.173-188.

Deininger, K. and Liu, Y. (2009): Economic and Social impacts of self-help groups in India. The World Bank, *Policy Research Working Paper Series*: no. 4884.

D'Espallier, B., Guerin, I., and Mersland, R. (2011): Women and Repayment in Microfinance: A Global Analysis. *World Development*, Vol. 39, No. 5, pp. 758-772.

D'espallier, B., Guerin, I. and Mersland, R.(2013): Gender bias in microfinance. *Journal of Development Studies*, Vol. 49, no. 5, pp.589-608.

D'Espallier, B.; Hudon, M. and Szafarz (2013) Unsubsidized microfinance institutions. Economics Letters, Vol. 120, pp. 174-176.

Dichter, T. W. and Harper, M. (2007): What's wrong with microfinance. In T.W. Ditcher and Harper M. (EDs.), *What's wrong with microfinance*. Essex, England: Practical Action Publishing.

Drake, D., and Rhyne, E. (2002): *The Commercialisation of Microfinance: Balancing Business and Development*. Bloomfield, CT: Kumarian Press.

Dulani, B., Mattes, R. and Logan, C. (2013): After a Decade of Growth in Africa, Little Change in Poverty at the Grassroots. *AFRO Barometer Policy Brief*, no. 1.

Dunn, E., and Arbuckle, J.G. Jr. (2001): The impact of microcredit: a case study from Peru AIM, USAID.

Duvendack, M.; Palmer-Jones, R.; Copestake, J. G.; Hooper, L.; Loke, Y. and Rao, N. (2011): What is the evidence of the impact of microfinance on the well-being of poor people? London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

EFlnA (2012): EFlnA Access to Financial Services in Nigeria 2012 Survey. Available at: www.efina.org/media-centre/events/innovation-fora/from-data-to-action.

Ehigiamusoe, G. (2011): *Issues in Microfinance: Enhancing Financial Inclusion*. Benin City: Mindex Publishing Co. Ltd.

Elendu, C.I., Nwaoba, P., Kama, U., Salisu, S.M., Yakubu, J., Nwosu, C.P. (2010): "The Financial Sector", chapter 7. Mordi, N.O.; Englama, A. and Adebusuyi, B.S. (Eds.), The Changing Structure of the Nigerian Economy. Atisele Vanessa Cards Co.; Nigeria.

Eze, C. C., and Ibekwe, U. C. (2007): Determinants of Loan Repayment under the Indigenous Financial System in Southeast, Nigeria. *The Social Sciences*, Vol. 2, no. 2, pp.116-120.

FEMIP (2008): A review of the economic and social impact of microfinance with analysis of options for the Mediterranean. *European Investment Bank*.

Frank, C. (2008): Stemming the tide of mission drift: microfinance transformations and the double bottom line, Women's World Banking Focus Note.

Freixas, X. and Rochet, J. C. (2008): *Microeconomics of Banking* (2nd ed.). Cambridge, Mass: MIT Press.

Ghosh, S., and Tassel, E. V. (2008) A Model of Mission Drift in Microfinance. Available at: www.spanish.microfinancegateway

Gibbon, D., and Kasim, S. (1991): *Banking on the rural poor Centre for Policy Research*. Malaysia: University Sains.

Gibbons, D. S., and Meehan, J. W. (1999): The microcredit summit's challenge: Working toward institutional financial self-sufficiency while maintaining a commitment to serving the poorest families. *Journal of Microfinance*, Vol. 1, pp. 131-191.

Godquin, M. (2004): Microfinance Repayment Performance in Bangladesh: How to Improve the allocation of Loans by MFIs. *World Development*, Vol. 32, no. 11, pp. 1909-1926.

Gonzalez-Vega, C.; Meyer, R. L.; Navajas, S.; Schreiner, M.; Rodriguez, J. and Monje, G.F. (1996): Microfinance market niches and client profiles in Bolivia. *Economics and Sociology Occasional Paper,* no. 236. Available at: http://ideasrepec.org/p/wpa/wuwpco/0109002.html

Gonzalez-Vega, C.; Schreiner, M.; Meyer, R. L.; Rodriguez, J. and Navajas, S. (1997): BancoSol: The challenge of growth for microfinance

organizations. Avaliable at: http://www.microfinancegateway.org/content/article/detail/1420

Gulli, H. (1998): Microfinance and poverty: Questioning the conventional wisdom. Washington, D.C.: Inter-America Development Bank.

Heckman, J., and Hotz, V. J. (1989): Choosing Among Alternative Nonexperimental Methods for Estimating the Impact of Social Programs: The Case of Manpower Training. *Journal of the American Statistical Association*, Vol. 84, no. 408, pp. 862-880.

Hermes, N., Lensink, R., and Meesters, A. (2011) Outreach and efficiency of microfinance institutions. *World Development*, Vol. 39, No. 6, pp.938-948.

Hermes, N., and Lensink, R. (2007): The empirics of microfinance: What do we know?. *The Economic Journal*, Vol. 117, no. 1, pp. 1-10.

Hishigsuren, G. (2004): Scaling up and mission drift: Can microfinance institutions maintain a poverty alleviation mission while scaling up? Doctor of philosophy Dissertation, Southern New Hampshire University, United Kindom.

Hishigsuren, G. (2007): Evaluating Mission Drift in Microfinance: Lessons for Programs with Social Mission. *Evaluation Review*, Vol. 31, no. 3, pp.1040-68.

Holvet, N. (2005): The Impact of Microfinance on Decision-Making Agency: Evidence from South India. Development and Change, Vol. 36, no. 1, pp. 75-102.

Homer, S. and Richard, S. (1996): *A History of Interest Rates*, 3rd ed. New Brunswick, NJ: Rutgers University Press.

Hossian, M. (1998): *Credit for alleviation of rural poverty: The Grameen Bank of Bangladesh.* Institute Research report 65. Washington, DC: International Food policy Research.

Hulme, D. (1991): The Malawi Mudzi Fund: Daughter of Grameen. *Journal of International Development*, Vol. 3, no 3, pp. 427-431.

Hulme, D. (2000): Impact Assessment Methodologies for Microfinance: Theory, Experience and Better Practice. *World Development*, Vol. 28, no. 1, pp. 78-98.

Husain, A. M. M. (1998): Poverty Alleviation and Empowerment-the second impact assessment study of BRAC's Rural Development Programme. *Research and Evaluation Divisin, BRAC*.

Iganiga, B. O. (2008): Much Ado About Nothing: The Case of the Nigerian Microfinance Policy Measures, Institutions and Operations, *Journal of Social. Sciences*, Vol.17, no. 2, pp. 89-101.

Ighomereho, S.A., Dauda, R.S., and Olabisi, J. (2012): 'Making Cooperatives Effective For Poverty Alleviation And Economic Development in Nigeria'. In Oluyombo, O. O. (eds.) *Cooperative Finance in Developing Economies*. Lagos: Soma Prints Ltd, pp. 23-39.

Jegede, C. A., Kehinde, J., and Akinlabi, B. H. (2011): Impact of Microfinance on Poverty Alleviation in Nigeria: An Empirical Investigation.

European Journal of Humanities and Social Sciences, Vol. 2, no. 1, pp. 97-111.

Jegede, C. A., and Kehinde, J. S., and Akinlabi, B. H. (2012): Trend of Outreach and Sustainability of Microfinance Institutions in Southwestern Nigeria. *Business & Management Review*, Vol. 13, no. 1, pp. 242-252.

Joe, R. and Benjamin, Q. (2000): *Microfinance and Poverty Alleviation*: Case studies from Asia and the Pacific*. New York*. 79. pp. 131-134, 253-263.

Julius, A. A., and Aminat, A. B. (2011): Microfinance and Gender in the context of millennium development goals (MDGs) in Nigeria. Journal *of Development and Agricultural Economics*, Vol. 3, no. 3, pp. 98-106.

Kalu, O. O. (2006): Transformation of micro-finance schemes from subsistence living to small-scale enterprises in Nigeria. *UNESCO Policy Paper*, no. 11-2.

Kamanza, R. M. (2014): Causes of Default on Micro-credit among Women Micro-Entrepreneurs in Kenya. A case Study of Women Enterprise Development Fund (Wedf) Msambweni Constituency. *IOSR Journal of Economics and Finance*, Vol. 3, no. 6, pp.32-47.

Kar, A. K. (2013): Mission Drift in Microfinance: Are the concerns really worrying? Recent cross-country results. *International Review of Applied Economics*, Vol. 27, no. 1, pp. 44 – 60.

Kar, A. K. and Swan, R. B. (2014): Interest Rates and Financial Performance of Microfinance Institutions: Recent Global Evidence. *Eurpopean Journal of Development Research*, Vol. 26, pp. 87 – 106.

Karlan, D. (2001): Microfinance Impact Assessments: The Perils of Using New members as a Control Group. *Journal of Microfinance*, Vol. 3, no. 2, pp.75-85.

Karlan, D. and Golberg, N. (2007): *Impact Evaluation for Microfinance*. Doing Impact Evaluation no.7, Thematic Group on Poverty Analysis, Monitoring and Impact Evaluation, World Bank

Karlan, D., and Zinman, J. (2010): Expanding Credit Acess: Using randomized supply decisions to estimate the impacts. *Review of Financial Studies*, Vol. 23, no. 1, pp. 433-464.

Kevane, M., and Wydick , B. (2001): Microenterprise lending to female entrepreneurs: Sacrifcing economic growth for poverty alleviation? *World Development*, Vol. 29, no. 7, pp. 1225-1236.

Khandker, S. R., Baqui, K. and Zahed, K. (1995): Grameen Bank: performance and sustainability. *World Bank Discussion Paper,* No. 306.

Khandker, S. R. (1998a): *Fighting Poverty with Microcredit: Experience in Bangladesh.* Oxford University Press, Inc. New York.

Khandker, S. R. (1998b): Micro credit programme evaluation: a critical review. IDS Bulletin, Vol. 29, no. 4, pp. 11-20.

Khandker, S. R. (2005): Microfinance and Poverty: Evidence Using Panel Data from Bangladesh. *World Bank Economic Review*, Vol.19, no. 2, pp. 263-286.

Kimando, L. N., Kihoro, J. M., and Njogu, G. (2012): Factors Influencing the Sustainability of Micro-Finance Institutions in Murang'a Municipality. *International Journal of Business & Commerce*, Vol. 1, no. 10. pp. 21

Ledgerwood, J. (1999): *Microfinance Handbook: An Institutional and Financial Perspective*. Washington, DC, Banco Mundial.

Louis, P., Seret, A., and Baesens, B. (2013): Financial Efficiency and Social impact of Microfinance Institutions Using Self-organizing Maps. *World Development*, Vol. 46, pp. 197-2010.

Makina, D. and Malobola, L. M. (2004): Impact assessment of microfinance programmes, including lesions from Khula Enterprise Finance. *Development Southern Africa*, Vol. 21, no. 5, pp. 799-814.

Marx, M.T., and Seibel, H.D. (2012): 'The Evolution of Financial Cooperatives in Nigeria: Do They Have a Place in Financial Intermdiation?'. In Oluyombo, O. O. (eds.) *Cooperative Finance in Developing Economies*. Lagos: Soma Prints Ltd, pp.8-22.

Maskay, N. M. (2011) Identifying influencing factors of mission drift in microfinance institutions: A case study of Paschimanchal Grameen Bikas Bank, Nepal. *NRB Working Paper*, No. 8.

Matul, M. and Tsilikounas, C. (2004): Role of Microfinance in the Household Reconstruction Process in Bosnia and Herzegovina. *Journal of International Development*, Vol. 16, pp. 429-466.

McKernan, S. (2002): The Impact of Microcredit Programmes on Self-Employment Profits: Do Noncredit Programme Aspects Matter? The Review of Economic and Statistics, Vol. 84, no. 1, pp. 93-115.

McCullough, N. and Baulch, B. (2000): Simulating the impact of Policy upon Chronic and Transitory Poverty in Rural Pakistan. *Journal of Development Studies*, Vol. 36, no. 6.

Mersland, R. and Strom, R.O. (2010): Microfinance mission drift? *World Development*, no. 38, vol. 1, pp. 28-36.

Meyer, R. (2002): Track Record of Finacial Institutions Assisting the Poor in Asisa. *ADB Institute Research Paper*, no. 49.

Milgram, B. L. (2001): Operationalizing microfinance: Women and craftwork in Ifugao, Upland Philippines, *Human Organization*, Vol. 60, pp. 212-224.

MixMarket (2010): Microfinance institutions. Available at: http://www.mixmarket.org/mfi

Mkpado, M., Idu, M. A., and Arene, C. J. (2010): Effect of Membership Homogeneity on the Performance of Agricultural Micro-Credit Groups in Rural credit Markets, Nigeria. *Pakistan Journal of Social Sciences*, Vol. 7, no. 4, pp. 304-317.

Montgomery, H., and Weiss, J. (2005): great Expectations: Microfinance and Poverty Reduction in Asis and Latin America. *ADB Institute Research Paper Series*, no. 63.

Morduch, J. (1999): The role of subsidies in microfinance: Evidence from the Grameen Bank. *Journal of Development Economics*, Vol. 60, No. 1, pp. 229-248.

Morduch, J. (2000): The microfinance promise. *Journal of Economic Literature*, Vol. 37, pp. 1569 – 1614.

Morgan, S. L. and Harding, D. J. (2006): Matching estimators of causal effects, prospects and pitfalls in theory and practice. *Sociological Methods & Research*, Vol. 35, no. 1, pp. 3-60.

Mosley, P. (2001): Microfinance and Poverty in Bolivia. *The Journal of Development Studies*, Vol.37, no. 4, pp. 101-132.

Mosley, P.; Olejarova, D. and Alexeeva, E. (2004): Microfinance, Social Capital Formation and Political Development in Russia and Eastern Europe: A Pilot Study of Programmes in Russia, Slovakia and Romania. *Journal of International Development*, Vol. 16, pp. 407-427.

Moulton, B.R. (1986): Random group effects and the precision of regression estimates, *Journal of Econometric*, no 32, pp. 385-397.

Muller, O. and Uhde, A. (2008): The Impact of External Governance Quality on the Economic Success of Microfinance Institutions Empirical Evidence. Available at: htt://apps.olin.wustl.edu/FIRS/pdf/MemberPapers/258/27.pdf

Mustafa, S., Ara I., Banu D, Hossain A, Kabir A, Mhsin M. and Jahan, S. (1996): Beacon of Hope: An Impact Assessment Study of BRAC's Rural Development Programme. Research and Evaluation Division, BRAC.

Nadiya, M., Olivares-Polanco, F. and Ramanan, T. R. (2012): Danger in Mismanaging the factors Affecting the Operational Sel-Sustainability (OSS) of Indian Microfinance Institutions (MFIs) – An Exploration into India Microfinance Crisis. *Asian Economic and Financial Review*, Vol. 2, no. 3, pp. 448-462.

Navajas, S.; Schreiner, M.; Meyer, R. L.; Gonzlez-Vega, C. and Rodriguez-Meza, J. (2000): Microcredit and the Poorest of the Poor: Theory and Evidence from Bolivia, *World Development*, Vol. 28, pp. 333-346.

Nawai, N. and Shariff, M. N. M. (2012): Factors Affecting repayment Performance in microfinance Programs in Malaysia. *Procedia-Social and Behavioral Sciences*, Vol. 62, no. 24, pp. 806-811.

NBS (2010): Nigerian Poverty Profile Report. Available at: wwwproshareng.com

Njoku, J. E., and Odii, M. A. C. A. (1991): Determinants of Loan Repayment under the Special Emergency Loan Scheme (SEALS) in Nigeria: A Cast Study of Imo State. *African Review of Money Finance and Banking*, no. 1, pp. 39-52.

Nwachukwu, J. (2014): Interest Rates, Target Markets and Sustainability in Microfinance. Oxford Development Studies, Vol. 42, no. 1, pp. 86 – 110.

Nwosu, F. O., Okorji, E. C., Nweze, N.J., Orebiyi, J. S., Nwachukwu, M. O., and Ibekwe, U. C. (2014): Loan Accessibility and Repayment Performamce of Livestock Farmers under the Agricultural Credit guarantee Scheme Fund in Southeast, Nigeria. *Developing Country Studies*, Vol. 6, no. 6, pp. 63-69.

Oke, J. T. O., Adeyemo, R., and Agbonlahor, M. U. (2007): An Empirical Analysis of Microcredit Repayment in Southwestern Nigeria. *Human & Social Sciences Journal*, Vol. 2, no. 1, pp. 63-74.

Okpara, G. C. (2010): Microfinance Banks and Poverty Alleviation in Nigeria. *Journal of Sustainable Development in Africa*, Vol. 12, no. 6.

Oladeebo, J. O., and Oladeebo, O. E. (2008): Determinants of Loan Repayment among Smallholder Farmers in Ogbomosho Agricultural Zone of Oyo State, Nigeria. *J. Soc. Sci*., Vol. 17, no. 1, pp. 59-62.

Olivares-Polanco, F. (2005): Commercializing Microfinance and Deepening Outreach? Empirical Evidence from Latin America. *ESR Review*, Vol. 7, no 2.

Onyeagocha, S. A. N. D., Chidebelu, E. C., Okorji, E. C., ada-Henri, U. M. N., and Korie, O. C. (2012): Determinants of Loan Repayment of Microfinance Institutions in Southeast States of Nigeria. *International Journal of Social science and humanities*, Vol. 1, no. 1, pp. 4-9.

Otero, M. (1999): *Bringing development back into microfinance*. Latin America: ACCION International.

Paul, B. and Conroy, D. (2000): Microfinance Phenomenon, The Foundation for Development Cooperation, Brisbone, Australia. Available at http://www.action.orgamicrojoel.html

Pillai, N. T., and Nadarajan, S. (2010): Impact of Microfinance_ An Empirical Study on the Attitude of SHG Leaders in Kanyakumari District-Tamilnadu. *International Journal of Enterprise and Innovation Management Studies*, vol. 1, no. 3, pp.89-95.

Pitt, M., and Khandker, S. (1998): The Impact of Group-based Credit Programs and Poor Households Bangladesh: Does the Gender of Participants Matter? *Journal of Political Economy*, Vol. 106, no. 4, pp. 958-996.

Pollinger, J. J., Outhwaite, J. and Guzman, H. C. (2007): The Question of Sustainability for Microfinance Institutions. *Journal of Small Business Management*, Vol. 45, no. 1, pp. 23-41.

Rahman, M. A. and Mazlan, A. R. (2014): Determinants of Financial Sustainability of Microfinance Institutions in Bangladesh. *International Journal of Economics and Finance*, Vol. 6, no. 9, pp. 107-116.

Rhyne, E. (1998): The yin and yang of microfinance: Reaching the poor and financial sustainability. *Microfinance Bulletin*, 6 – 8.

Roberts, P.W. (2013): The Profit Orientation of Microfinance Institutions and Effective Interest Rates. *World Development*, Vol. 41, pp. 120-131.

Robinson, M. (2001): *The Microfinance Revolution: Sustainable Finance for the Poor*, Washington DC: World Bank.

Rosenbaum, P. R. and Silber, J. H. (2001): Matching and thick description in an observational study of mortality after surgery. *Biostatistics*, Vol. 2, no. 2, pp. 217-232.

Rosenberg, R. (2002): Microcredit Interest Rates. *CGAP Occasional Paper*, no. 1.

Rosenberg, R. (2009) *Measuring results of microfinance institutions*. Washington, DC: Consultative Group to Assist the Poor (CGAP)

Roslan, A. H. and Karim, M. Z. A. (2009): Determinants of Microcredit Repayment in Malaysia: The Case of Agrobank. *Humanity & Social sciences Journal*, Vol. 4, no. 1, pp. 45-52.

Salazar, G. L. (2008): An Analysis of repayment Among Clients of the Microfinance Institution Esperanza International, Dominican Republic. *SS-AAEA Journal of Agricultural Economics*, pp. 1-24.

Saravia-Matus, S. L. and Saravia-Matus, J. A. (2012): Gender Issues in Microfinace and Repayment Performance: The Case of a Nicaraguan Microfinance Institution. *Articulos*, no 97, pp. 7-31.

Sayad, J. (1983): “The impact of rural credit on production and income distribution in Brazil”, chapter 45. In: Von Pischke, J.D., Adams, Dale, Donald, Gordon (Eds.), Rural Financial Markets in Developing Countires. john Hopkins for the World bank, Baltimore.

Schreiner, M. and Colombet, H. H. (2001): From Urban to Rural: Lessons for Microfinance from Argentina, *Development Policy Review*, Vol. 19, no. 3, pp. 339-354.

Schreiner, M. (2010) Seven extremely simple poverty scorecards. *Enterprise Development and Microfinance*, Vol. 21, No. 2, pp. 118-136.

Seibel, H.D. (2004): Upgrading indigenous microfinance institutions in Nigeria: Trials and errors. *The Nigerian Economic Summit Group*, London. Available at: www.hf.uni-koeln.de/data/aef/File/

Serrano-Cinca, C. and Gutierrez-Nieto, B. (2014): Microfinance, the long tail and mission drift, *International Business Review*, Vol. 23, pp.181-194.

Sharma, M. and Zeller, M. (1997): Repayment Performance in Group-Based Credit Programs in Bangladesh: An Empirical Analysis. *World Development*, Vol. 25, no. 10, pp. 1731-1742.

Sharma, S.R. and Nepal, V. (1997): *Strengthening of Credit Institutions/Programs for Rural Poverty Alleviation in Nepal*, United Nations, Economic and Social Council (ECOSOC) for Asia and Pacific, Bangkok, Thailand.

Siebel, H. D. and Marx, M.T. (1984): Ansatzmoglichkeiten fur die Mobilisierungvon Sparkapital zur Entwicklungsfinanzierung: Genossenschaften und autochthone Sparund Kreditvereine in Nigeria. Research reports of the BMZ, vol. 63.

Stewart, R., Van, R. C., Dickson, K., Majoro, M. and De Wet, T. (2010): A systematic Review of Evidence from Sub-Saharan Africa. *Technical Report.*

Stiglitz, J. and Weiss, A. (1981): Credit rationing in markets with imperfect information. *American Economic Review*, Vol. 71, no. 3, pp. 393 – 410.

Susannah, B. (2012): Are microfinance interest rate too high?. *avcj.com*, Vol. 25, no. 24.

Tang, S. R., Painter, G. and Bhatt, N. (2002): “Microcredit Programs in the United States; The Challenges of Outreach and Sustainability”, in Carr, J. and Tong, Z.Y. (Eds.), *Replicating microfinance in the United States*, Woorow Wilson Centre Press, Washington, D.C., pp. 191-221.

Tedeschi, G. A. (2008): Overcoming Selection Bias in Microcredit Impact Assessments: A case Study in Peru. *Journal of Development and Technology*, Vol. 9, no. 3-4, pp. 270-291.

Tehulu, T. A. (2013): Determinants of Financial Sustainability of Microfinance Institutions in East Africa. European *Journal of Business and Management*, Vol. 17, no. 5, pp.152-158.

Thapa, G. (2007): Sustainability and Governance of MFIs. Rome: International Fund for Agricultural Development.

Tucker, M. and Miles, G. (2004): Financial Performance of Microfinance Institutions: A Comparison to Performamce of Regional Commercial Banks by Georaphic Regions. *ESR Review*, Vol. 6, no. 1.

Ugbomeh, G. M. M. (2008): Determinants of Loan Repayment Performance Among Women Self help Groups in Bayelsa State, Nigeria. *Agriculturae Conspectus Scienticus*, Vol. 73, no. 3.

Ugwumba, C. O. A., Nnabuife, E. L. C., and Ike, P. C. (2008): Loan Repayment Among Microfinance Cooperators of the Nigerian Agricultural

Cooperative and Rural Development Bank (NACRDB) in Anambra State. *Journal of Research in National Development*, Vol. 6, no. 2.

UNCDF (2002): Microfinance Distance Learning Course. New York, United Nations Capital Development Fund Publication.

United Nation (2014): The Millennium Development Goals Report 2014. New York, United Nations Publication.

Urbina, M. (2004): "An Evaluation of Microfinance as a |Tool for Poverty Alleviation Case Study of SEPAS/FONCRESOL, Potosi,, Bolivia*". ProQuest Dissertation and Theses, DBI/INFORM Global*, pg. n/a.

Waggenaar, K. (2012) Institutional transformation and mission drift in microfinance. Centre of Development Studies, University of Cmbridge.

Wambugu, F. W., and Ngugi, J. K. (2012): Factors Influencing Sustainability of Microfinance Institutions in Kenya: A Case of Kenya Finance Trust. International *Journal of Innovative Research & Development*, Vol. 1, no. 11, pp. 519-537.

Weiss, J., and Montgomery, H., Kurmanalieva, E. (2003): Micro Finance and Poverty Reduction in Asia: What is the Evidence? *ADB Institute Research Paper Series*, no. 53.

Woller, G. M., Dunford, C., and Woodworth, W. (1999): Where to Microfinance. *International Journal of Economics Development*, Vol.1, pp.29-64.

Woller, G. M. (2002): The promise and peril of microfinance commercialisation. *Small Enterprise Development*, Vol. 13, no. 4, pp. 12 - 21.

Woolcock, M. J. (1999): Learning from failures in microfinance: What unsuccessful cases tell us how group based programs work. *American Journal of Economics and Sociology*, Vol. 58, no. 1, pp. 17-42.

Wooldridge, J. M. (2006): *Introductory Econometrics: A Modern Approach*. Canada: Lachina Publishing Services.

World Bank (1997) Sustainable Banking with the Poor: An Inventory of Microfinance Institutions in Latin America and the Caribbean. World Bank Publication, Washington, DC.

Yahaya, K. A., Osemmene, O. F., and Abdulraheem, A. (2011): Effectiveness of Microfinace Banks in Alleviating Poverty in Kwara State Nigeria. *Global Journal of Management and Business Research*, Vol, 11, no. 4.

Yaron, J. and Manos, R. (2006): Determining the Self Sufficiency of Microfinance Institutions. *Savings and Development*, no. 2, pp.131-160.

Yunus, M (2003) Banker to the Poor: Micro-Lending and the Battle Against World Poverty. New York: Public Affairs.

Yunus, M. (2007): Creating a World Without Poverty. Social Business and the Future of Capitalism. New York (NY): Public Affairs.

Zeller, M., Sharma, M., Ahmed, A. and Rashidi, S. (2001): Group-Based Financial Institutions for the Rural Poor in Bangladesh: An Institutional-and Household-Level Analysis. Washington DC: International Food Policy Research Institute IFPRI.

Zerai, B. and Rani, L. (2012): Is There a tradeoff between Outreach and Sustainability of Microfinance institutions? Evidence from India Microfinance Institutions (MFIs). *European Journal of Business and Management*, Vol. 4, no 2.

Zhang, P. (2014): Microfinance Interest Rate Marketing and Risk Management. *Contemporary Logistics*, Vol. 16, pp. 100 – 104.

Zohir, S., Sen, B., Asaduzzamman, M., Islam, J., Ahmed N., and Mamum, A.A. (2001): Monitoring and evaluation of microfinance institutions. Final Report, Bangladesh Institute of Development Studies.

Appendix 1

……..

……..

Dear Respondent,

As a candidate for the doctoral degree at University of Bradford, United Kingdom, I am conducting a research project on sustainability of microfinance banks in Nigeria. The research is driven by my concern that sustainable microfinance banks could be effective tool to fight poverty in Nigeria.

This enclosed survey questionnaire is used to seek your views on the issues of microfinance sustainability in Nigeria.

I would appreciate if you could complete the questionnaire in its entirety. The information you provide will ultimately help to formulate policies that would improve the operations of microfinance banks in Nigeria. This questionnaire is designed to maintain your anonymity, which means that no one will know your organization's identity, opinions and concerns that you express in this questionnaire.

Thank you in advance for your assistance and contribution in this academic inquiry.

Please feel free to contact me at any time.

Sincerely Yours,

Toyin Segun Ogunleye

Email: tsogunle@student.bradford.ac.uk or segto@yahoo.com

Doctoral Candidate,

University of Bradford, United Kingdom.

www.bradford.ac.uk

Appendix 2

DEPARTMENT OF ECONOMIC STUDIES
SCHOOL OF SOCIAL AND INTERNATIONAL STUDIES
UNIVERSITY OF BRADFORD, UNITED KINGDOM

Dear Sir/Madam
I request for your kind attention to this questionnaire. **The information you will provide in this questionnaire is strictly for academic purpose. Please note that your identity and that of your organization will remain anonymous.**

Name of MFB……..

Area Council……

Year of Commencement of Business……..

1. What is the major source of your funding?
(a) Personal/Self funding (b) Borrowing (c) Donors funding (d) Government funding

2. What is your primary motivation for establishing your Microfinance Bank?
(a) To help the poor (b) For community development (c) For profit making

3. What is your major source of revenue?
(a) Interest on loans (b) Charges on leasing (c) Others, specify……

4. Identify the major challenge customers face from accessing loan from your Microfinance Bank
(a) High Interest Rate (b) Non availability of Microfinance loan (c) Collateral Security

5. Give any other reason for question (4)…… ……

6. Tick as appropriate your operation cost as itemised in the table below:

Cost Items	**High**	**Medium**	**Low**
Interest Rate Cost			
Personnel Cost			
Loan Disbursement & Recovery Cost			

7. Give any other reason for question (6)…… ……

8. Tick as appropriate your customers' loan repayment rate in the 1st and 2nd half of your business since inception

	1st Half since Inception of your Business	2nd Half since Inception of your business
Below 50%		
50% - 69%		
70% - 79%		
80% - 89%		
90% and Above		

9. Tick as appropriate the percentage of loan to women

	1st Half since Inception of your Business	2nd Half since Inception of your business
Below 50%		
50% - 69%		
70% - 79%		
80% - 99%		
100%		

10. What is the major lending model of your Microfinance Bank?
    (a) Individual lending model (b) Group lending model (c) Village lending model

11. Give reason for your selection in question (10)…… ……...

12. To what extent does interest rate affect your customers' repayment rate?
(a) Very High (b) High (c) Medium (d) Low (e) Very Low

13. Give reasons for your answer in (12) above…..……

……
……

14. What are the challenges facing your Microfinance Bank?

……
……

……
……

……
……

……
……

15. What would you suggest that government should do to solve these challenges?

……
……

……
……

……
……

……
……

……
……

Thank you for taking your time to fill this questionnaire.

Appendix 3

Review of Impact Studies			
Studies	**Methodologies**	**Study Coverage**	**Results**
Pipelines Approach Pipeline design tries to control for attrition and selection bias by comparing either purposively, accidentally or randomly chosen treated members and non-members against purposively, accidentally or randomly chosen future members and non-members (Duvendack et al. 2011). The chosen future members and non-members i.e. those that are about to receive the treatment for the first time is called the pipeline group. The approach has different variants such as, ex-post double difference, panel double difference, control function and panel and has become popular owning to its ability to produce acceptable control groups and its use of randomisation (Duvendack et al. 2011). This approach was revealed in the works of Armendariz de Aghion and Morduch (2005), Khanderker (2005) and Tedeschi (2008) using panel data. The methodology eases the biases present in cross-sectional studies by assuming existence of strict exogeneity between time-varying unobservable and selection variable through standard panel data fixed effects. While random effect allows arbitrary association between time-invariant unobservables or individual trends in time-varying unobservables and programme participation (Wooldridge, 2006).			
Copestake et al. (1998)	Pipeline Approach	PULSE programme in Lusaka, Zambia	The results from the study, at the household level, showed that 37 per cent indicated falling real income, while those were yet to participate had falling income of only 28 per cent, this is an indication that about 9 per cent of borrowers were worse-off as a result of taking loan. Moreover, analysis at the enterprise level showed that there were no significant difference in profits between those that took loan and that of the control group. However, further analysis suggests significant difference in the growth rate of profits between those that obtained their first loan from March 1997 and March 1998.

Weiss et al. (2003); Montgomery and Weiss (2005)	Pipeline Approach	Asia and Latin America	Their studies further affirmed that difficulty of reaching the core poor through conventional financial instrument may not be unconnected with high risk involve which make it unattractive to microfinance customers
Meyer (2002)	Pipeline Approach	Asia	found that microfinance had overall positive effect on education and income, but had different results in magnitude and statistical significance across countries and programmes
Urbina (2004)	Pipeline Approach	Bolivia	Examined the role of microfinance in stimulating development. The author discovered that the project has no significant influence on the poor but has a little on women's empowerment and perceived improvement in the economic lives of the beneficiaries. The study therefore concluded that, though, microfinance has intrinsic value for the poor, it has limited influence on poverty reduction.

With/without Studies

Many practical microfinance impact studies use this methodology; it compares treated groups with comparable untreated groups without paying attention to randomisation. Although the approach is simple, it however associated with many challenges. For example, there is possibility that the treatment group excludes dropouts and the control group comes from different population make the approach susceptible to selection and placement biases (de Janvry et al. 2010). Selecting the control groups from different location risks placement bias unless the communities share the same characteristics (Duvendack et al. 2011). On the other hand, if the control group is drawn from the same location with treated group, there is the possibility of spill-over effects as microfinance intervention in a particular community has spill-over effects to the local economy and neighbours (Duvendack et al. 2011).

Abou-Ali et al. (2010)	With/without Approach	Egyptian Social Fund for Development	The impact of microcredit was tested on expenditure, poverty levels, income, literacy and employment using propensity-score matching and two years data on consumption, household income and expenditure survey. The findings from the study indicated that the programme had positive effect on the outcome variables, such that the total spending on health fell, illiteracy level reduced, poverty lowered, interventions in sanitation and transportation reduce household income. However, the effect of microcredit on household expenditure was high only in metropolitan and urban Upper Egypt. The result further showed that the benefits from road project as a result of the Social Fund for Development exceed the associated cost of the project and the microcredit programme was really pro-poor.
Barnes (2001)	With/without Approach	Zambuko Trust in Zimbabwe	The study indicated that the level of households' income level and income diversification, expenditure on food, school enrolment for boys improves. The results also showed that at the enterprise level, microfinance had positive effect on the net revenue
McKernan (2002)	With/without Approach	Grameen Bank, Bangladesh	The finding from the study showed significant positive relationship between programme participation and the non-credit aspects of participation on self-employment profits.

Carolyn et al. (1998)	With/without Approach	Uganda	The results indicated that, on the average, client household spent 35 per cent more than non-client households and have an average of one year of education more than non-client households.
Dunn and Arbuckle (2001)	With/without Approach	Accion Comunitaria microfinance in Peru	The result indicated that at enterprise level, micro credit had higher positive effect on the treatment group's microenterprise net revenue to the tune of US$1000 more than ? the non-client households. The result also showed that in terms of fixed assets accumulation and employment generation, the treatment group worth more US$500 of fixed asset and provided about 9 more employment days than non-clients households. However, the findings of household level analysis were varied, as it showed positive and negative effects in some outcomes. On the other hand, the finding indicates that micro credit allows female borrowers to prepare for the future and have control over financial decision.
Khandker (1998a)	With/without Approach	Bangladesh	The result showed that microfinance reduces poverty by stimulating per capita consumption among the participants' households. Based on consumption impact, poverty was reduced each year to the tune of 5 per cent by the households that borrowed from the microfinance schemes.
Analytical Approach Studies Analytical approach uses different econometrics method to mitigate the consequences of selection bias. These methods include propensity score			

matching, the use of instrumental variables and the use of multivariate and control function. In the case of propensity score matching, participants who share similar observable characteristics in an intervention programme is compare with non-participants, their mean differences are matched and generated. The major weakness of this approach is that it fails to account for unobservable characteristics (Rosenbaum and Silber 2001, Morgan and Harding 2006, Duvendack et al. 2011). The instrumental variables try to find appropriate variable or set of variables that correlate with the decision to participate in a programme but at the same time has no relationship on the outcome variable in order to control for both observable and unobservable characteristics. This method is difficult to implement due to inadequate use of appropriate instruments (Duvendack et al. 2011). Other variants of econometrics include control function, multivariate models which seek to answer identification problem.			
Aroca (2002)	Propensity Score Matching Techniques	Brazilian and Chilean microcredit programmes	At enterprise level, the findings indicated that impact of microcredit differs between the two countries and in terms of the sources of credit. For Brazil, the results showed that microcredit programmes had strong impact for the credit sourced from banks while those from NGOs indicated weak positive impact. (Also, bank based microcredit programmes had weak positive impact while those from NGOs was negative).

Mustafa et al. (1996)	Descriptive and Econometric Approaches	rural development project (RDP) credit programme in Bangladesh	Findings from the study showed that the members that are four-year older in the RDP were economically better off than the new members and other non-participating control group. It further showed that the older member households' asset and average weekly expenditure and per capita incomes were 112, 26 and 15 per cent, respectively, higher than the households in the control group. The impact of RDP credit was also tested consumption expenditure and wealth using regression analysis. The result indicated that education was positively related with wealth accumulation, while RDP credit showed a weak but positive and significant coefficient, higher dependency ratio declined the level of consumption. Overall, findings from the study consistently confirmed that impacts on male headed households are higher than female headed households.
Husain (1998)		RDP credit on Poverty and Women Empowernment in Bangladesh	The results of the findings were not significantly different from Mustafa et al. (1996). RDP credit had significant impact on net worth, non-land assets and savings to the tune of 50, 380 and 100 per cent, respectively higher than non-participating households. The result further showed that RDP credit improved children's schooling. The results could imply the possibility of sustainability of the

			programme.
Zohir et al. (2001)	Econometric Analysis and Descriptive Methods	Bangladesh	The result from the study indicated that micro credit reduce the economic well-being of the participants because about three-fourth of participants increase self-employment, and abandon their traditional farming activities which is the major source of income, consequently, their income declined. Also, the result of the social outcomes showed that household expenditure of regular participant of the project increased and their children have higher access to education. In respect of women empowerment, as measured by expenditure decision, self-perception, income control, mobility and contraceptive use, the result indicated that women empowerment improved. In term of poverty reduction, the result showed that, overall, micro credit reduce poverty to the tune of 5.5 per cent in two years.

Khandker (2005)	Panel Data	87 villages in 29 thanas? project areas covering about 1,700 households	The findings from the study were quite revealing as the effect of credits had no significant impact on the borrowing by males but had positive impact on per capita consumption of the borrowing female. The result further showed that between 1991/92 and 1998/99 in the sample villages moderate poverty fell by 17 percentage points and more than half declines in poverty was attributed to microfinance programmes alone, it further showed that microfinance programmes had spill-over effects on the welfare of non-participants in the sample villages.
Cuong (2008)	Panel Data	Vietnam	The study discovered positive impact of microfinance programme on expenditure and capita income, he however, found that non-poor received greater portion of the programme lending than the poor. This finding only corroborates the earlier finding of Colman (1999) and also the impact might be influenced by unobservable factors which are not related to microfinance programme.
McCulloug h and Baulch (2000)	Panel Data	Pakistan	The result of the study indicates that transitory poverty can be reduced drastically by polices designed to smooth households' income, while chronic poverty can be reduced in the long-run through large and sustained growth in households' incomes.
Natural Experiments/Survey Studies This approach examines impact of microfinance intervention by exploiting			

difference between treatment and control groups on the assumption that different territories are functionally comparable. The approach is simple to implement, however, Karlan (2001) showed that attributing the impact of microfinance to differences in the mean of two groups without addressing selection problem is the major weakness of the methodology. Also, Pitt and Khandker (1998) observed methodology that merely compare participant with nonparticipants are subject to programme placement and self-select into programme biases. Programme placement bias occurs due to failure of microfinance to randomize the placement of their programme, they base their decision on factors or characteristics that are not visible to researchers (Berhane and Gardebroek, 2011).			
Matul and Tsilikounas (2004)	Group Discussions and Semi-structured Individual in-depth Interview	in Bosnia and Herzegovina	Findings from the study indicated that for most clients, micro-enterprises provided need impetus and sustained self- employment activities for households in the post war period. Among the households affected by the crises, income realized from micro-enterprise help them to meet their important needs in the reconstruction period. The paper suggested a more integrated approach of both financial and non-financial services as it could play a more substantial reconstruction role in post-conflict areas.
Mosley et al. (2004)	Pilot Survey	Russia, Romania and Slovakia	The result for all countries examined showed that microfinance had little impact on the associational membership. However, the interview data suggested a stronger connection between microfinance and finance to informal political organizations such as bonding within groups for social or political purposes, solidarity and trust groups.

Milgram (2001)		Northern Philippines	The study focused on women that had access to credit from Central Cordilera Agricutural Programme, the study indicated that only women that had existing crafts benefited from the programme, though many of them could not repay their loans when due. Also, vagaries of demand for crafts hinder business owners from transmitting gains to small producers. The author argued that microfinance required other social initiative other than credit for it to have tangible impact on its members.
Ahmad (2003)	Pilot Survey	Bangladesh	Opinions of selected microfinance field workers were sought on how microfinance could really reach the poorest. The respondents were of the opinion that NGOs overemphasis on microcredit and repayment had brought NGOs development effort to question whereas challenges of non-accessibility, misuse and low return persist among the poorest. They conclude that clients remain dependent on NGOs and that microenterprises are unsustainable
Akram and Hussian (2011)	Questionnaires and Descriptive Research Design	District Okrara-Pakistan	The findings showed that microfinance improved income level of the poor and further confirmed positive relationship between customers' satisfaction level and microfinance services.

Mosley (2001)	Small-sample Surveys	Bolivia	the result showed that microfinance institutions had positive impact on assets and income levels, however, the income impact has a negative correlation with income of the poor household that choose to invest in low-return assets with low risk. Also, average debt-service ratio was high, indicating that microfinance could add to client vulnerability if the mechanism for repayment fails to materialise and therefore borrowers may be forced out of the scheme and further impoverish them. The result further showed that successful low-income clients were those that have saving deposits and do not venture into fixed capital purchases in their early stage while those that collapse back to poverty do not have the backing of solidarity group.
Adams and Bartholomew (2010)	Primary and Secondary Data	Ghana	The result from the study indicated that microfinance only impacted marginally on the recipients of the credit facility socially and economically due to lack of enabling environment for rural financing, infrastructural deficiency, lack of pro poor policies and inability to extend credit facility to non-farm sector of the economy. The result is insightful and relevance especially for the developing countries of Africa, because transaction costs that could arise from the factors identified by the author could indeed limit the impact of microfinance in reducing

			poverty.
Holvet (2005)	Household survey	South India	The findings from the study are quite revealing, the study shows that when borrower obtain credit directly from the bank regardless of their gender status decision making patterns did not change. However, when social group are involved in bank's credit, the decision making process drastically changed in favour of more joint male-female decision making process and that the pattern of joint decision was further strengthen in the long-run when training was involved.
Makina and Malobola (2004)		Khula enterprise finance in South Africa	The results show a positive impact on the beneficiaries of loans of the target areas. It also indicated that the degree of impacts vary between poor rural beneficiaries and not so poor urban beneficiaries as the later derived more benefits that the formal.
Afrane (2003)	Eclectic approach	Ghana and South Africa	The study revealed that microfinance has positive effect on the participants' social activities, women empowerment and public respect but showed negative effect on their family life. The findings further revealed that

			households' income, housing expenditure such as expenditure on food, children and health improved.
Akhtar and Bodla (2011)	Household survey data	Pakistan	The study suggests that the missing link could be addressed by facilitating supply chains and networking them with microfinance services by leveraging on the existing Pakistan Postal service in order to reduce the cost associated with credit to the poor.
Joe and Benjamin (2000)	Household survey data	Asia and the Pacific	The results from the study further showed that average income of those that have access to credit rise by 12.9, 29.3, 15.6 and 46.0 per cent for Indonesia, Bangladesh, Sri-Lanka and India, respectively, while income of non-borrowers on increased by 3.0, 22.0, 9.0 and 24.0 per cent for the respective countries.
Zeller et al. (2001)	Household survey data	Bangladesh	The study compares households that participate in microfinance in different social groups. The result showed annual averaged impact of Tk37 per Tk100 credit available but noted that various groups were significantly influenced by seasons which accounted for their different impacts.

Bebczuk and Haimovich (2007)	Household survey data	Some Latin American countries	The findings indicate that credit increase labour income. The finding further showed that access to credit increased the hourly income of poor 4.8, 12.5 and 4.5 percent in Bolivia, Guatemala and Haiti, respectively, compared with households without access to credit. However, the impact of credit is sensitive to the quantum or size of the loan.
Randomised Control Trials Studies Randomised Control Trials Approach tries to link the effects of an intervention to its causes. This approach draws potential customers from yet to be implemented intervention programme and assigns potential customers into two groups namely treatment and control group, so that the general impact of the programme can be measured. Selection of potential customers into either treated and control group is carried out randomly so that potential outcomes are independent from treated assignment. However, individual in either treated or control group must have the same both observed and unobserved characteristics. This will ensure that outcomes are not marred by self-selection into treatment and placement biases (Hulme 2000, Karlan and Goldberg 2007, Blundell and Costal Dias 2008). The major weaknesses of this approach include attrition problem, spill-over effects cannot be ruled out. Also, Karlan and Golberg (2007) noted that studies that randomized based on one period data could fail to capture the complete impact of microfinance credit because impact of credit can take longer period to be fully materialised. It has also been criticised on the ground that it is costly, time consuming and very difficult to implement both ethically and politically (Heckman and Hotz, 1989).			
Karlan and Zinman (2010)	Field experiment and follow-up data		The result showed a marginal loan was beneficial to both borrowers and lenders, such that marginal loan improved borrowers welfare across different economic status and improve lenders' profit.
Coltler and Woodruff (2008)		Bimbo programme in Mexico	Findings from the study were mixed; credit had positive impact on the smaller firms and negative effect on the larger ones.

Deininger and Liu (2009)	Survey	Indhira Kranthi Patham in India	The finding from the study revealed that longer exposure to the programme had positive relationship with asset accumulation, consumption and nutritional intake, while heterogeneity of the impact indicated that benefits from the programme exceeds it cost and that it was beneficial to the poor.
Banerjee et al. (2009)	Random Sample Survey	India	The initial findings indicated improvement in total borrowing of microfinance institutions, consumption and investment of business enterprises also improved. However, the study also showed no impact of access to microcredit on per capita expenditure but increased durable expenditure after 15 to 18 months. The authors further showed that nondurable spending of households that do not have business of their own increase while prospective business owners' households saw decrease in nondurable consumption but those existing business recorded improvement in their profit because they invested in durable goods. The study found no positive impact on women's decision making, education and health.
Review of impact Studies on Nigeria			
Akanni (2007)	Tobit Regression Analysis/Multi Stage Sampling Technique	Small scale poultry business in South Western Nigeria	Low poultry farmers' productivity were associated with low famers' education, less year of experience; high interest micro loan and low annual expenditure

Okpara (2010)	Regression Analysis/ Stratified Random Sampling Design		Lack of access to credit, high commodities prices and low profits were the major causes of poverty. The impact of microfinance was minimal, at initial stage and at the second stage, credit availability reduces poverty
Jegede et al. (2011)	Regression Analysis/ Analysis of Variance (ANOVA)		Significant difference between beneficiaries and non-beneficiaries of loan disbursement as the income and economic status of loan beneficiaries improved significantly.
Aigbokhan and Asemota (2011).	Logit Regression Model/ Stratified Random Sampling Design	Lift Above Poverty microfinance scheme (LAPO) from the two States	Cumulative loan, loan circle, education and experience with LAPO reduce poverty status of the clients.
Abiola (2011)	Logit Regression/ Field Survey		More access to credit occurred where MFIs offered different financial products because microenterprises were less sensitive to availability of internal funds than locations where such opportunities do not exist.
Awojobi and Bein (2011)	Multiple Regression Technique		Impact of microloans and savings on growth was first established, consequently, effect of growth on poverty index. The study identified microfinance development as key to poverty reduction efforts in Nigeria.
Yahaya et al. (2011)	Analysis of Variance (ANOVA)/Stratified Sampling Technique	Kwara State in Nigeria	Microfinance plays a major in the economy through employment generation and provision of financial services to the active poor thereby help in reducing poverty

Babandi (2011)	Self-developed Likert Scale questionnaire		No significant difference in geographical location, genders, and occupation when using outreach and sustainability as criteria for evaluation
Jegede et al. (2012)	Panel Data	Lagos and Ondo States in the Western Region	Increasing trend of outreach and sustainability in the region and recommended increasing use of relative small loans for further outreach and sustainability

Appendix 4

Socio-economic Features of the Federal Capital Territory, Abuja

This section of the chapter gives brief descriptions of socio-economic features of the study area. The description was carried out along the lines of location demographic features, size, education services, agricultural services, health care services, social welfare, electricity, water and sanitation and employment. Since each area council within FCT, Abuja is unique discussion will also focus on peculiar features of each area council. The section uses FCT, Abuja baseline data derived from a comprehensive social, economic and infrastructural survey result of all 858 communities in FCT, Abuja for this section of analysis.

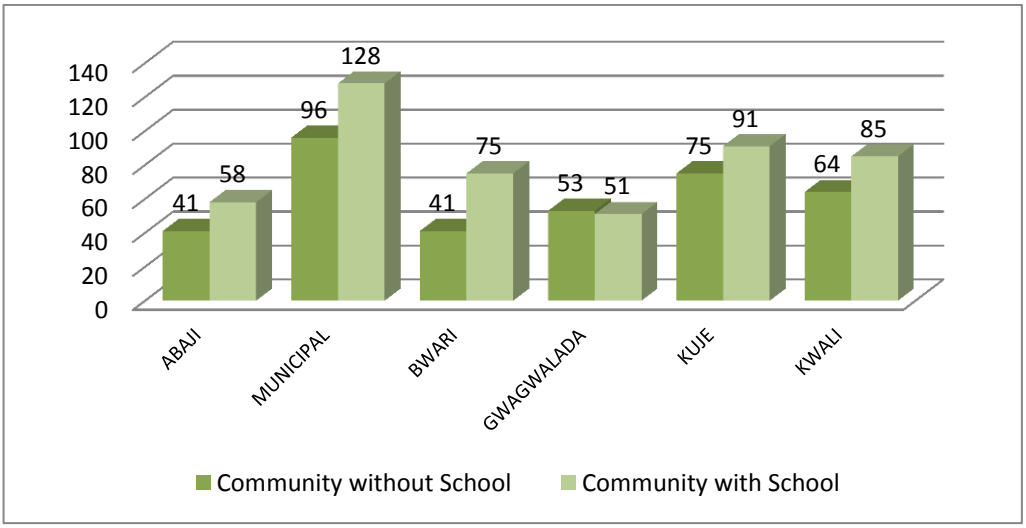
Demographic Features of FCT, Abuja

The FCT, Abuja is located within the north centre geo-political zone of Nigeria with the total land marks area of about 8,000 square kilometers; it has about 2.2 million house hold with a total population of about 6.7 million people. The FCT, Abuja was established by the Federal Capital Territory Act of 1976 with six Area Councils of Municipal, Kwali, Bwari, Kuje, Abaji and Gwagwalada. The six Area Councils is made up of 858 communities with 76 per cent of the communities depend on subsistence farming while the 16 per cent of the communities depend on salary and wages from the public sector. Among the 16 per cent communities that depend on salary and wages 53 per cent alone comes from Municipal area council, being the areas where most government offices operate and Gwagwalada and Kuje area councils account for 6 per cent.

Education Services in FCT, Abuja

Using access to school as an indicator of social economic development, the development pattern seems to be uneven within the FCT, Abuja with some rural communities are denied of basic social amenities while in some cases there is concentration of education amenities in a particular locality. The distributions of those that have access to school within the area councils are also lopsided in favour of Municipal area council which accounted for 26%, it has highest number of access to school in FCT, Abuja followed by 19% for Kuje Council area. Others such as Kwali, Bwari, Abaji and Gwagwalada had percentage access to school of 17%, 15%, 12% and 10%, respectively.

Access to School in FCT, Abuja



On the whole, about 57 per cent of the existing 858 communities in the FCT, Abuja have access to school the remaining 43 per cent of the communities do not have access to school. In view of the large number of people in these communities that do not have access to school which are majorly poor rural people micro services such as loan to the poor become essential to empower this vast number of people.

Access to School in FCT, Abuja

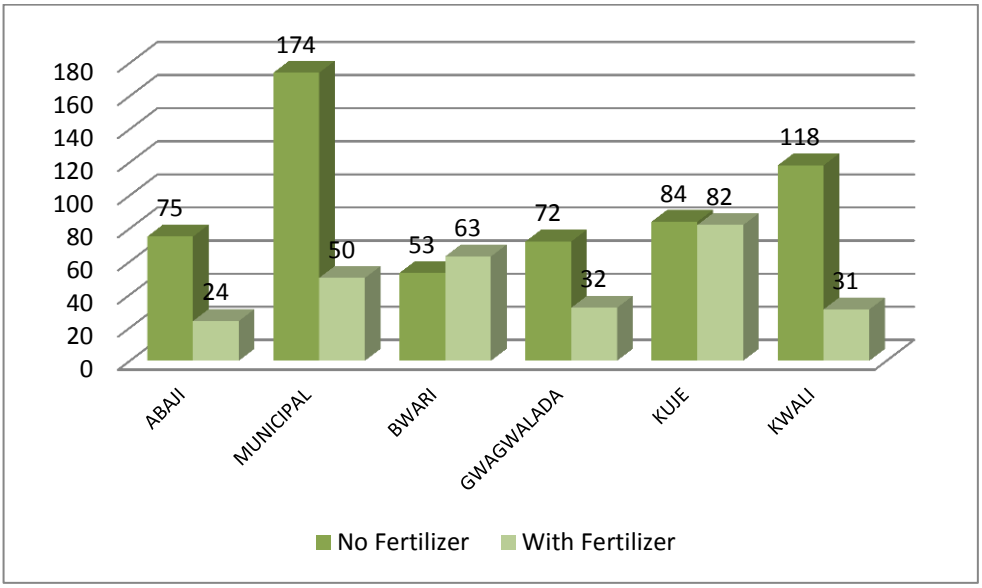
S/N	Area Council	Community without School	Community with School	Grand Total
1	ABAJI	41	58	99
2	MUNICIPAL	96	128	229
3	BWARI	41	75	116
4	GWAGWALADA	53	51	104
5	KUJE	75	91	166
6	KWALI	64	85	149
	Grand Total	**370**	**488**	**858**

Source: FCT Baseline Data

Agricultural Services in FCT, Abuja

Agriculture is mainstay of FCT, Abuja economy being a major employer of labour and main source of revenue to the local communities. Majority of the communities in FCT, Abuja are farmers as farming employs about 76 per cent of the communities within the FCT, Abuja. Despite the importance role of agriculture could play in the economic development of FCT, Abuja, the ingredients for agriculture inputs except farmland are in short supply. For example, over 76 per cent of the communities do not have access to fertilizer though only 33 per cent have access to it, surprisingly Kwali and Kuje area councils which harbour rural poor people constitute largely part of the communities without access to fertilizer.

Access to Fertilizer in FCT, Abuja

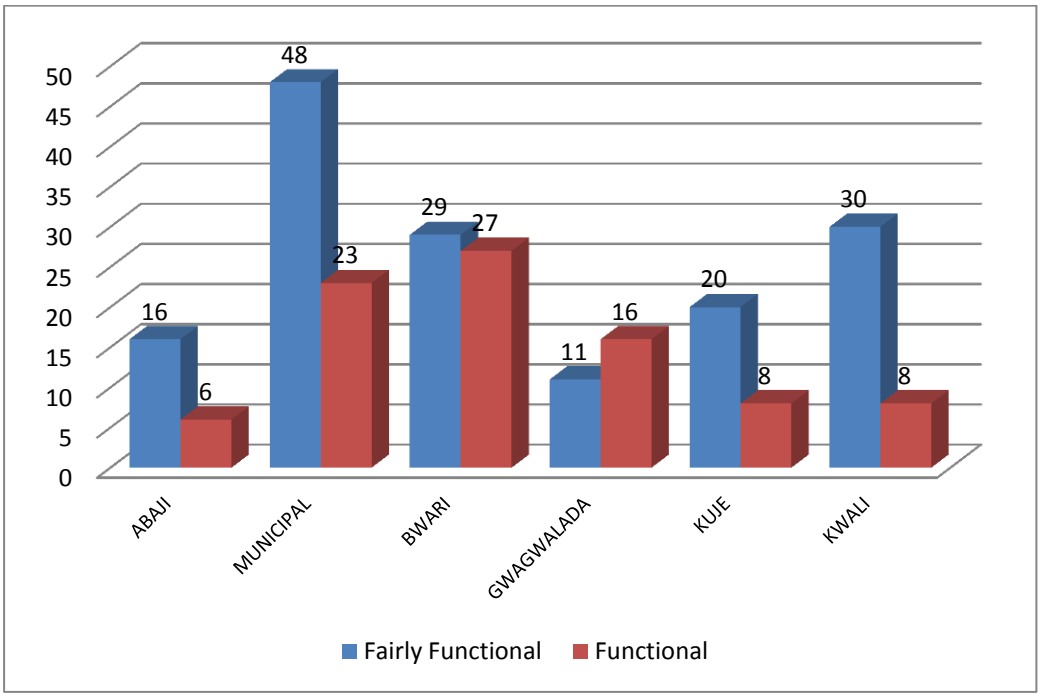


In view of this, agricultural production which should have contributed tremendously to the development of local communities is in small scale. Statistics indicate about 89 per cent of people in the local communities depend on cutlasses and hoes for their farming activities while only 2 per cent of the rural population have access to modern equipment such as tractor and plough bulls. Also, 93 per cent of communities are without access to agric-extension services while only 4 per cent has access to such services which underscore the low yields of most agricultural produce in FCT, Abuja. In addition, majority of local communities are without agro-service centre estimated about 94 per cent while only 6 per cent has access to such services (FCT, Abuja, data baseline, 2009).

Health Care Services in FCT, Abuja

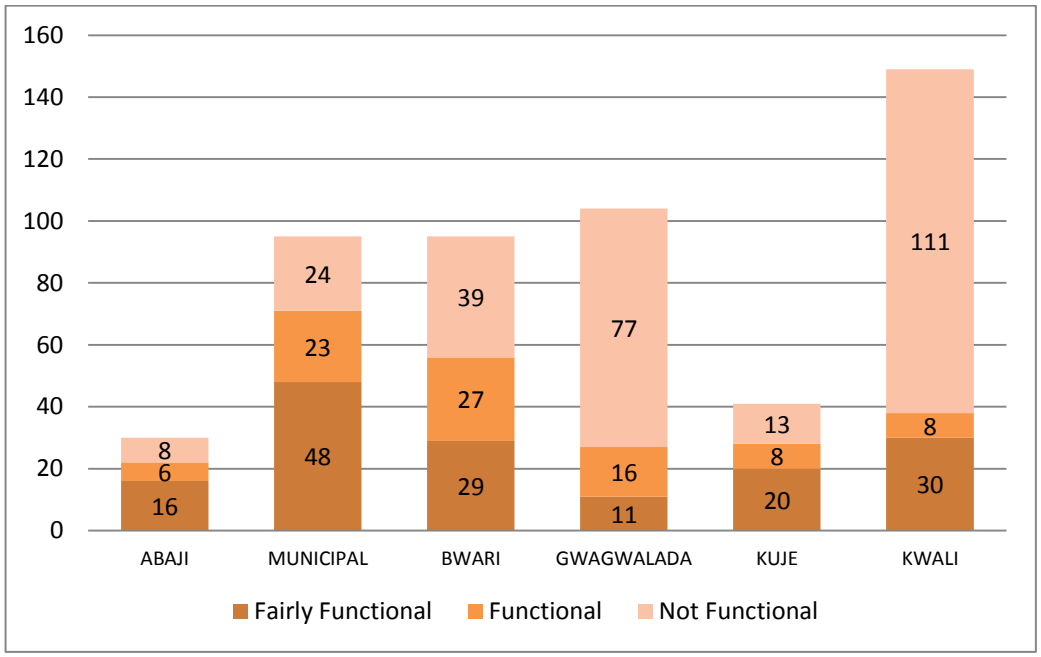
Statistics from FCT, Abuja baseline data indicated that 74 per cent of the communities in Abuja are without primary health care with the Municipal area council has the highest number of communities without primary health care when compare with other area councils within FCT, Abuja.

Access to Primary Health Car (PHC) in FCT Abuja



In term of health care facilities functionality data showed that 53 per cent are not functional, 30 per cent are fairly functional while only 17 per cent of the facilities are functional. Overall, Municipal area council has the lowest number of not functional health facilities in 25 communities while Kwali area council recorded the highest not functional facilities in 74 communities.

Functionality of Health Facilities in FCT Abuja



The total number of health workers in FCT, Abuja was estimated at 4,205 seems to be fairly distributed across the six area councils. From the total health worker, 24 per cent operates within the Municipal area, 17 per cent in Bwari follow by 16, 16 15 and 12 per cent for Abaji, Gwagwalada, Kuje and Kwali, respectively.

Number of Health Workers in FCT, Abuja

FCT Area Councils	Number of Nurses	Number of Doctors	Number of Communities Health Extension Workers	Number of Communities Midwife	Grand Total
Abaji	361	217	56	45	679
Amac	480	334	100	78	992
Bwari	340	231	86	56	713
Gwagwa-lada	317	211	65	76	669
Kuje	341	167	73	67	648
Kwali	287	156	36	25	504
Total	2126	1316	416	347	4205

FCT Baseline Survey (2009)

In term of ante-natal awareness by pregnant women in FCT, Abuja, about 78 per cent attend ante-natal while 21 per cent do not and 1 per cent use herbal traditional medicine to treat their pregnancies. Majority of those that do not attend ante-natal are poor women in rural communities of FCT, Abuja. Also the awareness of family planning is relatively low as only about 43 per cent of the population practice family planning using abstinence, pills, withdrawal, condom, injectables and breast feeding while the remaining 57 per cent are not. The highest number of people with no family planning resides in Gwagwalada estimated at 85 per cent of the total family in the area council, while the lowest 71 per cent reside in Abaji area council. In addition, the HIV/AIDS awareness of the communities is low with 66 per cent of the communities are not aware various campaign put in place by the government as oppose the remaining 34 per cent.

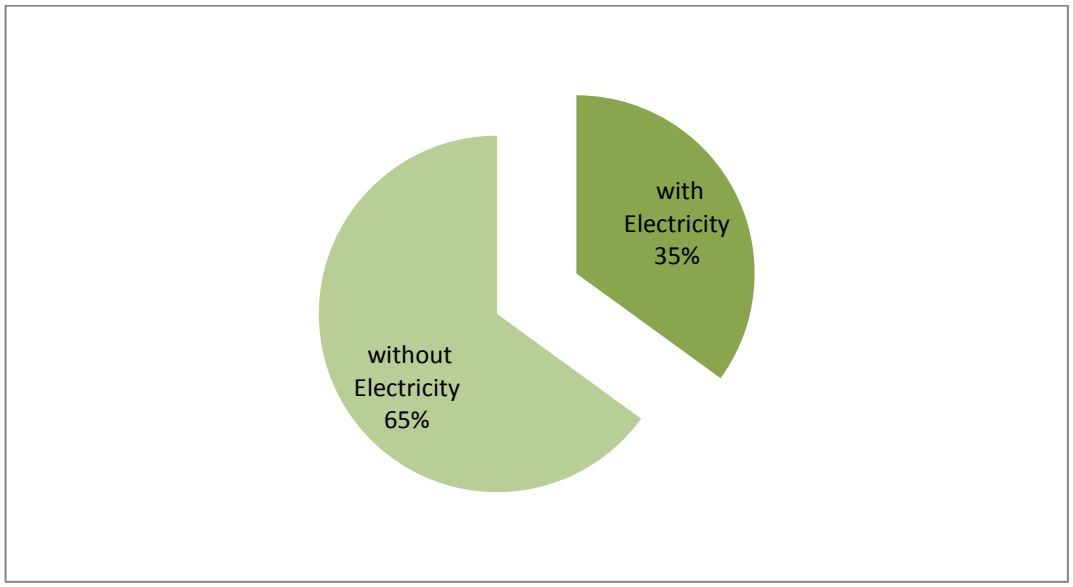
Social Welfare

Social services in FCT, Abuja are low despite that Abuja is the capital city of Nigeria. Judging from the access to police post, security and recreational centers such as sporting activities, most social welfare services concentrated in the Municipal area council being social centre of FCT, Abuja. For example, most sporting facilities have the highest concentration in the Municipal. In term of security system, about 76 per cent of the communities use vigilantes, community-based form of protection, while the remaining 24 per cent rely on police and other securities services and these communities are confine to the Municipal area council. Overall, about 72 per cent of people residing in FCT, Abuja believe they are unsafe in term of having adequate security protection. Also, emergency services are in short supply as about 91 per cent of communities rely on community-based emergency services for unexpected outbreaks such as fire outbreak and sicknesses, only 9 per cent of the communities have access to emergency services and are mostly found in Kwali and Municipal area councils.

Electricity Supply

Electricity supply is a major challenge hampering growth in Nigeria, the condition of electricity supply in FCT, Abuja is not different from the situation in other state of Nigerian federation. Out of the 858 communities in FCT, Abuja about 65 per cent do not have electricity supply; the remaining 35 per cent that have access do not enjoy regular supply of electricity. The majority of the communities only rely on kerosene and firewood for light and cooking.

Percentage of Communities with Electricity in FCT Abuja



Distribution of electricity across the sixth area council are uneven, with Municipal area council has 53 per cent of the communities have access to electricity and Kuje area council only has 17 per cent of its communities with electricity.

Employment, Income and Land in FCT, Abuja

Employment pattern is an important factor in the economic life of any society, in FCT, Abuja, farming employs 76 per cent of the local communities, 18 per cent are government workers while the remaining 8 per cent are self employed. Despite that farming constitutes highest employer of labour, accessibility to land for the purposes farming or property development in FCT, Abuja has become a serious challenge as vast of the land area have appropriated to the government which make it difficult for farmers to purchase, lease holding and rent for farmland. Therefore, the local communities access to land in FCT, Abuja is limited estimated for 44

per cent to the Municipal, Bwari 15 per cent, Abaji 13 per cent, Kuje 11 per cent, Kwali 10 per cent and Gwagwalada 7 per cent.

The earning capacity of families in the communities in the six area councils exhibit huge disparity as only 2 per cent of the families earn over N50,000 annually, while about 50 per cent of the families within the local communities earn between N20,000 – N50,000 and about 39 per cent earn between N10,000 – N20,000.

Water and Sanitation

Majority of the people living in the rural communities do not have access to safe drinking water, they drink water from rivers without any treatment which are capable of causing diseases. Overall, about 36 per cent of the communities have access to safe drinking water supply with 9 per cent has access to pipe water supply and 27 per cent to bore-hole water supply, the remaining 64 per cent are without save drinking water. In term of access to sanitary services, 36 per cent of the Municipal area council's communities engage in proper refuse disposal, 23 per cent for Bwari, 17 per cent for Abaji, kuje 12 per cent, Gwagwalada 9 per cent and kwali 3 per cent.

The development of FCT, Abuja was not rapid until the seat of power was moved from Lagos to Abuja in 1991 and since then, efforts have been in place towards the development of the entire area. Majority of the people in rural communities are excluded from formal financial services. The result of the EFIna financial services survey conducted in 2008 showed that over 60% of the people of the North Centre zone were financially excluded while less than 30% were banked. This data underscored the positive role

microfinance lending could play in the FCT in helping majority of rural poor people excluded from formal financial services to have access to finance, which are majorly farmers.

Geographical Distribution of Microfinance Banks in the FCT, Abuja

The CBN database indicated that the number of licensed and operational microfinance banks in FCT, Abuja at 50 which represented 41.0 per cent and 6.5 per cent of the total number of microfinance banks in the North Central geopolitical zone of Nigeria and the entire country, respectively. The patterns of the 50 microfinance banks in the FCT, Abuja across the six area councils are not evenly distributed but lopsided in favour of urban area. For example, Municipal area council which is the city centre accounted for 88 per cent while area councils such as Gwagwalada, Kwali and Bwari only accounted for 6, 4 and 2 per cent, respectively. The remaining two area councils namely Abaji and Kuje do not microfinance bank in their locality except in some few cases where other microfinance branches are located within the area councils.

Distribution of Microfinance Bank in Abuja

FCT Area Councils	Number of MFBs
Abaji	-
Municipal	44
Bwari	1
Gwagwalada	3
Kuje	-
Kwali	2

Source: CBN Data Base

Appendix 5

Table 5.10: Sustainability Regression (Squared)

	Fixed Effect	Random Effect
	Operational Self-Sufficiency	**Operational Self-Sufficiency**
	19	20
Yield	-0.03	0.01
	(-0.02)	(0.06)
Yield^2	0.05	0.06
	(0.59)	(0.80)
Gender	0.03	-0.02
	(0.19)	(-0.14)
Labcost	0.05	0.07
	(0.71)	(0.92)
Loan to Assets (LOASS)	0.35***	-0.29***
	(-3.72)	(-3.06)
log of Loan (LLoan)	0.03	0.03*
	(1.68)	(1.70)
Efficiency Indicator (EFF)	-0.05	-0.07
	(-1.17)	(-1.50)
Constant	0.16	0.13
	(0.66)	(0.53)

*( ) t-Statistic, *** significant at 1%, ** significant at 5%, * significant at 10%*
The Hausman test (19&20) shows Chi2(7)=2.62, with the Prob>Chi2=0.9176, When P-value is insignificant i.e. Prob>chi2 larger than 0.05, random effects is chosen but when it is not significant fixed effect is selected. Based on Hausman test, Random effect in column 20 is chosen for this analysis.

Source: Author's calculations, based on data from the CBN.

Table 5.11: Mission Drift Regressions

	FIXED EFFECT		RANDOM EFFECT	
	Average Loan Size (AVLOAN) (21)	Percentage of Women Borrowers (GENDER) (22)	Average Loan Size (AVLOAN) (23)	Percentage of Women Borrowers (GENDER) (24)
Operating Self-Sufficiency (OPSS)	0.91	-0.23	1.74	-0.21
	(0.63)	(-1.15)	(1.23)	(-0.95)
Yield	8.99	-0.20	10.00	-0.34
	(0.95)	(-0.15)	(1.02)	(-0.22)
Yield x Individual Lending Model	-5.09	0.53	-3.94	0.18
	(-1.83)	(1.41)	(-1.59)	(0.47)
Yield x Group Lending Model	4.15	-0.63	2.96	-0.20
	(1.25)	(-1.41)	(0.99)	(-0.43)
Labour Cost x Individual Lending Model	24.77	-2.79	18.95	-0.40
	(1.42)	(-1.19)	(1.23)	(-0.16)
Labour Cost x Group Lending Model	-27.10	3.19	-20.60	0.49
	(-1.38)	(1.21)	(-1.19)	(0.18)
Log of Scale (LSCALE)	0.26	-0.01	0.36	0.01
	(1.08)	(-0.39)	(1.49)	(0.27)
Efficiency (EFF)	0.08	0.08	-0.82	0.01
	(0.07)	(0.46)	(-0.68)	(0.03)
Constant	2.42	0.71	0.73	0.37
	(0.82)	(1.78)	(0.26)	(0.81)

*( ) t-Statistic, *** significant at 1%, ** significant at 5%, * significant at 10%*

The Hausman test (21&23) shows Chi2(8)=4.99, with the Prob>Chi2=0.7583, while for 22 & 24 shows Chi2(8)=30.37 and Prob>Chi2=0.0002. When P-value is insignificant i.e. Prob>chi2 larger than 0.05, random effects is chosen but when is significant fixed effect is selected.

Based on Hausman test, Random effect models in column 23 & Fixed effect in column 22 are chosen for this analysis

Table 5.12: Women and Repayment Regressions

	FIXED EFFECT		RANDOM EFFECT	
	Portfolio at Risk (PAR) (25)	Provision Expense Rate (PROBAD) (26)	Portfolio at Risk (PAR) (27)	Provision Expense Rate (PROBAD) (28)
Gender	1.43	-0.05	0.65	-0.04
	(1.16)	(-0.33)	(1.33)	(-0.44)
Operating Self-Sufficiency (OPSS)	0.72	0.16	0.34	0.15
	(0.87)	(1.43)	(0.77)	(-1.12)
Yield	-2.48	-0.39	1.17	-0.10
	(-0.45)	(-1.06)	(0.52)	(-0.27)
Yield x Individual Lending Model	0.78	-0.34	0.63**	-0.23**
	(1.50)	(-1.83)	(1.93)	(1.94)
Yield x Group Lending Model	-0.57	0.39	-0.83**	0.25**
	(-0.72)	(1.91)	(2.41)	(1.96)
Labour Cost x Individual Lending Model	-3.54	3.56**	-4.24**	2.73**
	(-0.95)	(2.85)	(-2.17)	(2.98)
Labour Cost x Group Lending Model	3.15	-3.89**	5.02**	-2.96**
	(0.63)	(2.77)	(2.19)	(-2.88)
Log of Scale (LSCALE)	-0.20	-0.03**	-0.09	-0.02*
	(-1.24)	(-2.20)	(-1.53)	(-1.76)
Efficency (EFF)	-0.27	0.01	-0.78	-0.05
	(-0.18)	(0.21)	(-0.85)	(-0.82)
Constant	2.22	0.40**	0.98	0.27*
	(1.26)	(2.05)	(1.58)	(1.93)

*( ) t-Statistic, *** significant at 1%, ** significant at 5%, * significant at 10%*

The Hausman test (25 & 27) shows Chi2(9)=0.66, with the Prob>Chi2=0.9999, while for 26 & 28 shows Chi2(9)=2.63 and Prob>Chi2=0.9772 . When P-value is insignificant i.e. Prob>chi2 larger than 0.05, random effects is chosen but when is significant fixed effect is selected.

Based on Hausman test, Random effect models in column 27& 28 are chosen for this analysis